This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

BOSTON
MEDICAL LIBRARY
8 THE FENWAY

TRANSACTIONS

OF THE

TWENTY-SIXTH ANNUAL MEETING

OF THE

ALUMNÆ ASSOCIATION

OF THE

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA

MAY 17TH AND 18TH, 1901.

PHILADELPHIA:
PUBLISHED BY THE ASSOCIATION.
1901.

STON MED.
MAR 14 19
LIBRARY

TALO
MAR 14 1919
M. E.

LIST OF PRESIDENTS

FROM ORGANIZATION.

1875. *Emeline H. Cleveland, M.D.
1879. Elizabeth C. Keller, M.D.
1884. Hannah T. Croasdale, M.D.
1886. Clara Marshall, M.D.
1888. Mary Putnam-Jacobi, M.D.
1891. Elizabeth R. Bundy, M.D.
1893. Mary E. Allen, M.D.
1894. Mary Putnam-Jacobi, M.D.
1895. Elizabeth C. Keller, M.D.
1897. Anna M. Galbraith, M.D.
1899. Lilian Welsh, M.D.
1900. Elizabeth L. Peck, M.D.
1901. Calista V. Luther, M.D.

* Deceased.

CONTENTS.

	PAGE
List of Presidents	2
Officers of the Association, 1901–1902	5
Committees	6
Members	7
Honorary Members	15
In Memoriam	16
Minutes:	
Report of Recording Secretary	19
Report of Corresponding Secretary	19
Report of Treasurer	20
Report of Executive Committee	20
Report of Board of Censors	21
Report of Committee on Educational Fund	22
Report of Committee on Fellowship	22
Report of Committee on Award of Fellowship	23
Report of Committee on Library	24
Report of Committee on Necrology	24
Report of Committee on Entertainment	24
Report of Committee on Preventive Medicine	24
Report of Committee on Alumnæ Representation	25
Report of Committee on the Ann Preston Fund	25
Report of Committee on Commencement	26
Report of Committee on Medical Information	27
Report of Nominating Committee	27
Report on the College. By CLARA MARSHALL, M.D.	30
Report of the Woman's Hospital. By ELLA B. EVERITT, M.D.	33
Report of the West Philadelphia Hospital for Women. By ANNA P. SHARPLESS, M.D.	36
Report of the Maternity of the Woman's Medical College of Pennsylvania. By ANNA E. BROOMALL, M.D.	38
Report of the Woman's Hospital Maternity. By ANNA E. BROOMALL, M.D.	39
The Hospital and Dispensary of the Alumnæ of the Woman's Medical College of Pennsylvania. By GERTRUDE A. WALKER, M.D.	40
The Christian Association. By CHARLOTTE FAIRBANKS	41

PAGE

The President's Address. By ELIZABETH L. PECK, M.D. . . . 42
Anæmias of Children. By FRANCES R. SPRAGUE, M.D. . . . 47
Clinical Varieties of Anæmia. By MARY E. LAPHAM, M.D. . . 51
Laboratory Diagnosis of the Anæmias. By MARY B. GARVIN, M.D. 56
A Case of Secondary Anæmia of the Pernicious Type Associated with Marked Jaundice; Rapid Recovery. By ELEANOR C. JONES, M.D. 61
Two Cases of Pulmonary Influenza. By A. HELENA GOODWIN, M.D. 69
Clinical Notes of a Case of Hæmaturia and Pyuria. By JOHANNA BAPTISTELLA LEO, M.D. 75
Chemical and Bacteriological Examinations of Urine in a Case of Hæmaturia and Pyuria. By JANE L. BERRY, M.D. . . . 84
Primary Malignant Disease of the Clitoris. By ELLA B. EVERITT, M.D. 87

BOSTON MEDIC.
MAR 14 1910
LIBRARY

OFFICERS OF THE

ALUMNÆ ASSOCIATION.

1901–1902.

PRESIDENT,

CALISTA V. LUTHER.

VICE-PRESIDENTS,

ELLA B. EVERITT, BERTHA LEWIS.

RECORDING SECRETARY,

GERTRUDE A. WALKER.

CORRESPONDING SECRETARY,

MARY V. MITCHELL-GREEN.

TREASURER,

ANNA P. SHARPLESS.

DIRECTORS,

One year: ELEANOR C. JONES.
Two years: MARY W. GRISCOM.
Three years: EMMA E. MUSSON.

CENSORS.

One Year.

RITA B. CHURCH,
N. M. LEAVELL,
CLARA T. DERCUM.

Two Years.

HANNAH T. CROASDALE,
ANNA LUKENS,
MARY PUTNAM-JACOBI.

Three Years.

ADA R. THOMAS,
ADA C. BEDAL,
SARA J. WILLIAMS-VANDERBECK.

Four Years.

VIRGINIA W. SMILEY,
BENNETTA D. TITLOW,
MARY E. ALLEN.

Five Years.

ELIZABETH C. KELLER,
ELIZABETH R. BUNDY,
LUCY N. TAPPAN.

STANDING COMMITTEES.

Committee on Education.

One year, RUTH WEBSTER LATHROP; two years, ELIZABETH C. KELLER, Chairman; three years, ANNA P. SHARPLESS; four years, GRACE E. SPIEGLE; five years, CLARA MARSHALL.

Committee on Fellowship.

One year, BERTHA LEWIS, Chairman; two years, REBECCA FLEISHER; three years, RACHEL WILLIAMS; four years, JANE L. HERSOM; five years, ELIZABETH C. KELLER.

Committee on Library.

One year, A. HELENA GOODWIN; two years, ELIZABETH L. PECK; three years, ELLA B. EVERITT; four years, CHARLOTTE C. WEST; five years, CAROLINE M. PURNELL, Chairman.

Committee on Necrology.

One year, IDA E. RICHARDSON, Chairman; two years, LUCY N. TAPPAN; three years, MARY GETTY; four years, ANNA M. REYNOLDS; five years, ALICE M. HACKLEY.

Committee on Entertainment.

One year, MARGARET F. BUTLER, Chairman; two years, MIRIAM M. BUTT; three years, ANNINA C. RONDINELLA; four years, MARY THOMAS MILLER; five years, SARAH H. LOCKREY.

SPECIAL COMMITTEES.

Committee on Preventive Medicine.

IDA E. RICHARDSON, Chairman; FRANCES EMILY WHITE, LENA V. INGRAHAM, BERTHA LEWIS, FRANCES C. VAN GASKEN.

Committee on Alumnæ Representation.

HANNAH T. CROASDALE, Chairman; EMMA V. CULBERTSON, SARAH E. PALMER, LILIAN WELSH, EMMA E. MUSSON.

Committee on Commencement.

ELIZABETH R. BUNDY, Chairman; ALICE ROGERS-EASBY, MARTHA G. K. SCHETKY, MAUD A. BOWYER, LUCY N. TAPPAN.

Nominating Committee.

MIRIAM BITTING-KENNEDY, Chairman; A. HELENA GOODWIN, MARY W. GRISCOM, FRANCES C. VAN GASKEN, ELEANOR C. JONES.

Committee on Medical Information.

GERTRUDE A. WALKER, Chairman; CLARA T. DERCUM, ANNINA C. RONDINELLA.

MEMBERS.

ADAMS-**MacLachlan**, JEANNIE S.	Allegheny, Penna.	1891
ADAMSON-**Reed**, ELEANOR	Philadelphia, Penna.	1888
ALLEN, MARY E.	Philadelphia, Penna.	1876
ALLEN-**Whitney**, FLORENCE	Augusta, Me.	1882
ANDERSON, ELLA M.	Philadelphia, Penna.	1893
BACON, ANNA L.	Philadelphia, Penna.	1894
BAILEY, LYDIA LAVINIA	Spiceland, Ind.	1894
BAKER, FRANCES N.	Media, Penna.	1877
BAKER, JANE R.	West Chester, Penna.	1892
BALDWIN, HELEN G.	Indianapolis, Ind.	1897
BALDWIN, KATE W.	Philadelphia, Penna.	1890
BARKER, EDITH A.	Norristown, Penna.	1897
BARNES, IDA C.	Topeka, Kansas.	1890
BARRELL, MARY E.	York, Me.	1897
BARY, VERA F.	Germantown, Penna.	1878
BASSETTE, M. IMOGEN	Cooperstown, N. Y.	1887
BAUER, MARIE L.	Philadelphia, Penna.	1890
BEALL-**Kramer**, MARY	Wheeling, W. Va.	1893
BEAVER, MATILDA	Philadelphia, Penna.	1899
BEDAL, ADELHEID C.	St. Louis, Mo.	1891
BEESLEY, NELLIE EVERITTE	Belvidere, N. J.	1896
BENEDICT, CELESTIA A.	Bridgeport, Conn.	1874
BENN, RACHEL R.	Tientsin, China.	1890
BENNETT, M. ALICE	Biltmore, N. C.	1876
BETTS, HELEN L.	Jamaica Plain, Mass.	1872
BILL, HARRIET P.	Waltham, Mass.	1893
BILSTEIN, EMMA L.	Highlands, N. C.	1893
BITTING-**Kennedy**, MIRIAM	Yonkers, N. Y.	1889
BLACKBURN, ELLA	New Vienna, Ohio.	1898
BLACKBURN, IDA E.	Greensburg, Penna.	1895
BLEHL, MARY	Philadelphia, Penna.	1874
BLITZSTEIN, ROSALIE M.	Philadelphia, Penna.	1898
BOARDMAN-**Pulsifer**, CORNELIA L.	Newton Centre, Mass.	1877
BOULTON, ELEANORE F.	Franklin, Penna.	1900
BOWYER, MAUD A.	Philadelphia, Penna.	1898
BRANDEIS, FLORENCE M.	Louisville, Ky.	1894
BREED, R. ANNA	Philadelphia, Penna.	1892
BRENSINGER, ELLEN C.	Philadelphia, Penna.	1885
BREWSTER, MARY J.	Northampton, Mass.	1892

Broomall, Anna E.	Philadelphia, Penna.	1871
Brown, Amelia E.	Rutland, Vt.	1883
Brown, Charlotte B.	San Francisco, Cal.	1874
Brown, Ellen E.	Chester, Penna.	1881
Brown, Mary	Swarthmore, Penna.	1892
Brownell, Emily A. Varney	Haywards, Cal.	1900
Bryan, Mary E.	Ogdensburg, N. Y.	1887
Buchanan, Mary	Philadelphia, Penna.	1899
Buchanan-**Custer**, Ella M.	Manayunk, Penna.	1883
Bundy, Elizabeth R.	Philadelphia, Penna.	1884
Butler, Margaret F.	Philadelphia, Penna.	1894
Butt, Miriam M.	Philadelphia, Penna.	1894
Cadwallader, Edith Warner	Philadelphia, Penna.	1900
Caminade-**Gillespie**, Mary E.	Philadelphia, Penna.	1894
Carpenter, Frances A.	Carpenter, N. B.	1895
Castlebury, Alzine M.	Williamsport, Penna.	1892
Cattell, Frances F.	Philadelphia, Penna.	1896
Chapin, Laura S.	Philadelphia, Penna.	1888
Charteris, Mary A.	Moncton, N. B.	1894
Christiancy, Mary E.	Norristown, Penna.	1883
Church, Rita B.	Lock Haven, Penna.	1874
Clark, Elizabeth M.	Philadelphia, Penna.	1893
Clarke, Ida	Youngstown, Ohio.	1878
Clement, Ruth	Philadelphia, Penna.	1889
Cohen-**May**, Sarah A.	Philadelphia, Penna.	1879
Collins, Elizabeth F.	Norfolk, Va.	1899
Comly-**Dercum**, Elizabeth D.	Philadelphia, Penna.	1888
Comstock, Elizabeth	Philadelphia, Penna.	1901
Conner, Annie L.	Germantown, Penna.	1901
Cooke-**Kurtz**, Helen	Canton, Ohio.	1884
Copeland-**Coombs**, Irene	St. Joseph, Mo.	1888
Cotton, Mary H.	New York City, N. Y.	1888
Croasdale, Hannah T.	Philadelphia, Penna.	1870
Culbertson, Emma V. P. B.	Boston, Mass.	1881
Davis, Ella M.	Holyoke, Mass.	1882
Davis, J. Griffith	New York City, N. Y.	1877
Davis, Mary S.	Philadelphia, Penna.	1892
Dercum, Clara T.	Philadelphia, Penna.	1887
Dexter, Ella L.	Boston, Mass.	1881
Dice, Laura J.	York, Penna.	1890
Dougherty, Henrietta M.	Philadelphia, Penna.	1890
Dranga, Amelia Augenia	Pittsburg, Penna.	1897
Dyer, Florence A.	Riverton, N. J.	1894
Eckstein, Mary A.	Philadelphia, Penna.	1890
Evans, Alice Robinson	Trenton, N. J.	1898

EVANS, MATILDA A.	Columbia, S. C.	1897
EVERITT, ELLA B.	Philadelphia, Penna.	1891
EVERITT, MARTHA S.	Scranton, Penna.	1895
FAIRBANKS, ANNIE D.	Northboro, Mass.	1891
FARNHAM-**Leader**, ALICE M.	Lewiston, Me.	1884
FAYE-**Levering**, IDA	Nellore, India.	1891
FINLEY, JOHANNA S.	Altoona, Penna.	1887
FISHER, MARY	Philadelphia, Penna.	1889
FLEISHER, REBECCA	Philadelphia, Penna.	1886
FORMAD, MARIE K.	Philadelphia, Penna.	1886
FRIEDENBERGER, KATRINA	Williamsport, Penna.	1898
FULLERTON, ANNA M.	Ludhiana, India.	1882
FULTON, MARY H.	Canton, China.	1884
GALBRAITH, ANNA M.	New York City, N. Y.	1884
GALT-**Simmons**, ELEANOR E.	Cocoanut Groves, Fla.	1879
GARDINER, AGNES M.	Toledo, Ohio.	1899
GARVER, JANE K.	Harrisburg, Penna.	1872
GASTON, EMMA F.	Chicago, Ill.	1876
GASTON, IDA ESTELLE	Philadelphia, Penna.	1893
GASTON, MAY E.	Somerville, N. J.	1888
GATES, MARY J.	Taunton, Mass.	1895
GETTY, MARY	Philadelphia, Penna.	1890
GIFFORD, MARION	Philadelphia, Penna.	1895
GILMORE, AMELIA W.	Auburn, N. Y.	1888
GOODMAN, CHARLOTTE E.	Denver, Col.	1893
GOODWIN, A. HELENA	Philadelphia, Penna.	1889
GREEN-**Wadsworth**, MARY A.	Philadelphia, Penna.	1887
GREENWALD-**Erdman**, MARY	Stroudsburg, Penna.	1892
GRIER, ELIZA ANNA	Matthews, N. C.	1897
GRIM, ELLA WILLIAMS	Philadelphia, Penna.	1899
GRISCOM, ELIZABETH W.	Philadelphia, Penna.	1887
GRISCOM, MARY W.	Philadelphia, Penna.	1891
GULICK, ESTHER W.	Stroudsburg, Penna.	1896
GUSTON-**Mackie**, LAURA V.	Attleboro, Mass.	1874
HACKLEY, ALICE M.	Philadelphia, Penna.	1893
HALL, ANNIE BARTRAM	Philadelphia, Penna.	1891
HAMMOND-**McGuigan**, CLARA M.	Overbrook, Pa.	1887
HANCHETT, JULIET E.	Syracuse, N. Y.	1885
HARRIS, LILIAN N.	Seoul, Corea.	1897
HARVEY-**Clarke**, LOUISE	Riverside, Cal.	1892
HASKINS, MARY GRACE	Detroit, Mich.	1901
HATFIELD-**Richardson**, BERTHA S.	Philadelphia, Penna.	1892
HAYDON, MARIE W.	Philadelphia, Penna.	1892
HAYHURST, SUSANNA	Philadelphia, Penna.	1857
HAZLITT-**Upson**, GRACE	Glenridge, N. J.	1884

HEDGES-**Matzke**, EDITH V.	Palo Alto, Cal.	1895
HEIBERGER, IDA J.	Washington, D. C.	1883
HEISTAND-**Moore**, ELEANOR M.	Woodbury, N. J.	1890
HERON-**Guthrie**, FANNY S.	Glasgow, Scotland.	1880
HERRICK, JESSIE L.	Elmira, N. Y.	1895
HERSOM, JANE LORD	Portland, Me.	1886
HIBBERD-**Allen**, AMY M.	Glen Lock, Penna.	1892
HIGGINS, LELIA	Strong, Maine.	1893
HILDRUP, JOSEPHINE P. W.	Philadelphia, Penna.	1901
HILLS, J. ERNESTINE	Willard, N. Y.	1893
HILLS, LAURA HEATH	Willimantic, Conn.	1896
HOLMES, MARTHA C.	New York City, N. Y.	1886
HOLMES, MARY.	Washington, D. C.	1901
HOLT, MARGARET A.	Kane, Penna.	1893
HOOD, MARY G.	Newton Centre, Mass.	1874
HOUGH, MARY P. H.	Montgomery Co., Penna.	1881
HOWE, ELSIE B.	Boston, Mass.	1888
HOWE, HELEN ROBERTSON	Norwich, Conn.	1901
HURD-**Mead**, KATE C.	Middletown, Conn.	1888
INGRAHAM, LENA V.	Boston, Mass.	1883
INGRAM, EMILY J.	Philadelphia, Penna.	1883
ISRAEL, CLARA T.	Philadelphia, Penna.	1896
IVES, S. EDITH	Philadelphia, Penna.	1898
JANNEY-**Stoddart**, FRANCES S.	Rydal, Penna.	1890
JENKS-**Southern**, JANE M.	Atlantic City, N. J.	1889
JOHNSON, SOPHIA E.	Jhelum, Punjab, India.	1888
JONES, ELEANOR C.	Philadelphia, Penna.	1887
JONES, FLORENCE LEIGH	Brooklyn, N. Y.	1895
JONES, MARY A. D.	New York City, N. Y.	1875
JONES, MARY S.	Boston, Mass.	1892
KANE, ELIZABETH D.	Kane, Penna.	1883
KARMARKAR, GURUBAI	Bombay, India.	1892
KELLER, ELIZABETH C.	Jamaica Plain, Mass.	1871
KEMP, AGNES	Harrisburg, Penna.	1879
KINDBORG, AMY	Ahus, Sweden.	1900
KING, BERTHA A.	Philadelphia, Penna.	1900
KIRSCHBAUM, HELEN	Philadelphia, Penna.	1893
KLECKNER-**Saltzgiver**, SARAH	York, Penna.	1861
KUETHE, ANNA M.	Hoboken, N. J.	1900
KUGLER, ANNA S.	Guntoor, India.	1879
LADD-**Hall**, CAROLYN C.	Haverford, Penna.	1889
LAKE, EVA W. F.	Pleasantville, N. J.	1891
LAPHAM, MARY E.	Highlands, N. C.	1900
LATHROP, RUTH WEBSTER	Philadelphia, Penna.	1891
LAUGHLIN, REBECCA PRATHER	Greencastle, Penna.	1897

LAWRENCE, N. LOUISE	Roxbury, Mass.	1896
LEAVELL, N. M.	St. Louis, Mo.	1865
LE FEVRE, ADRIENETTE L.	Blackwoodtown, N. J.	1889
LEO, JOHANNA BAPTISTELLA	New York City, N. Y.	1897
LEWIS, BERTHA	Philadelphia, Penna.	1893
LILLIBRIDGE, ALICE	Olyphant, Penna.	1900
LIPPERT, FRIEDA E.	New York City, N. Y.	1889
LITTELL, ALICE	Florence, Italy.	1893
LOCKREY, SARAH H.	Philadelphia, Penna.	1888
LOVELACE, ELIZABETH M.	Philadelphia, Penna.	1895
LOVELL, LUCINDA S.	Cavendish, Vermont.	1900
LOVELL, MARTHA E.	Cavendish, Vermont.	1899
LUCAS, EMMA JOHNSON	Peoria, Ill.	1892
LUKENS, ANNA	New York City, N. Y.	1870
LUTHER, CALISTA V.	S. Orange, N. J.	1885
MACFARLANE, CATHARINE	Germantown, Penna.	1898
MCALLISTER, ANNA M.	Philadelphia, Penna.	1873
MCBRIDE, J. L. W.	Mansfield, Ohio.	1894
MCCALMONT-**Stone**, HARRIETTE O.	Kalamazoo, Mich.	1893
MCCOLLIN-**Tatum**, MARY B.	Haverford, Penna.	1889
MCCUNE, MARY V.	Martinsburg, W. Va.	1895
MCKEON, KATHERINE SOPHIA	Bristol, R. I.	1897
MCKIRACHAN-**Lyons**, M. HANNAH	Oxford, Penna.	1893
MCLEAN, MARY L. E.	Brooklyn, N. Y.	1887
MANSFIELD, BLANCHE M.	Orono, Me.	1900
MARSH, CAROLINE H.	New Brunswick, N. J.	1890
MARSHALL, CLARA	Philadelphia, Penna.	1875
MARTINE, ANGELINE	Utica, N. Y.	1892
MAYO, FLORENCE	Philadelphia, Penna.	1890
MIESSE, KATHARINE DE W.	Easton, Penna.	1889
MILLER, ELIZABETH K.	Ridley Park, Penna.	1895
MILLER, MARY THOMAS	Philadelphia, Penna.	1899
MITCHELL-**Green**, MARY V.	Swarthmore, Penna.	1884
MORGAN, ROSE	Warrenville, Penna.	1895
MUNHALL, KATHARINE S.	Buffalo, N. Y.	1893
MUNRO, CATHERINE	Providence, R. I.	1899
MUNRO, SARAH R.	Milwaukee, Wis.	1872
MUSSON, EMMA E.	Philadelphia, Penna.	1883
NOBLE, HARRIET ISABEL	Brooklyn, N. Y.	1901
NOBLE, MARY R.	Colorado Springs, Col.	1901
NUSBAUMER, PAULINE S.	Pleasanton, Cal.	1900
OSMOND, MARTHA E.	Philadelphia, Penna.	1898
OTIS, SUSAN G.	Auburn, N. Y.	1884
PALMER, SARAH E.	Boston, Mass.	1880
PATTERSON, ELLEN JAMES	Allegheny, Penna.	1898

PEABODY, ANNA M. E.	Zanesville, Ohio.	1883
PECK, ELIZABETH L.	Philadelphia, Penna.	1885
PECKHAM, KATHARINE A.	Boston, Mass.	1889
PEEPLES, REBECCA R.	Philadelphia, Penna.	1895
PHILBRICK, INEZ C.	Lincoln, Neb.	1891
PIPER-**Houck**, MARY R.	La Crosse, Wis.	1887
PLATT, MARY H.	Philadelphia, Penna.	1891
POTTER, FRANCES W.	South Framingham, Mass.	1891
POWLES-**Herman**, ELLA	Philadelphia, Penna.	1892
PRESLEY, SOPHIA	Camden, N. J.	1879
PRESTON, ELEANOR FAIRMAN	Marion, Va.	1901
PRESTON, MARY	Wernersville, Penna.	1884
PRICE, HANNAH	Chester, Penna.	1881
PURNELL, CAROLINE M.	Philadelphia, Penna.	1887
PURTÉ, HARRIET L. N.	Philadelphia, Penna.	1894
PURVIS, ALICE HATHEWAY	Roxbury, Mass.	1898
PUTNAM, EMMA	Poughkeepsie, N. Y.	1883
PUTNAM-**Jacobi**, MARY	New York City, N. Y.	1864
RANDOLPH, ANNA MOON	Newport News, Va.	1899
REID-**Keefer**, JANE	Sterling, Ill.	1889
REIFSNYDER, M. ELIZABETH	Shanghai, China.	1881
REISER, MAGDALENA B.	Mayville, N. Y.	1895
REYNOLDS, ANNA M.	Philadelphia, Penna.	1885
RICHARDS, EMMA E.	Norristown, Penna.	1886
RICHARDS, FLORENCE HARVEY	Philadelphia, Penna.	1899
RICHARDSON, EMMA M.	Camden, N. J.	1898
RICHARDSON, IDA E.	Philadelphia, Penna.	1879
RICKARDS, C. F. J.	Watkins, N. Y.	1894
RIDGWAY-**Zeigler**, ELLA M.	Philadelphia, Penna.	1874
ROBBINS, RACHEL	Pittsburg, Penna.	1898
ROGERS-**Easby**, ALICE	Media, Penna.	1884
RONDINELLA, ANNINA C.	Philadelphia, Penna.	1899
SATTERTHWAITE, LAURA H.	Trenton, N. J.	1888
SCHERMERHORN, GRACE C.	Jefferson, Iowa.	1896
SCHETKY, MARTHA G. K.	Philadelphia, Penna.	1897
SCHETKY, S. ELIZABETH A.	Philadelphia, Penna.	1900
SCHISLER, BELLE A.	Philadelphia, Penna.	1901
SCHNEIDER-**Blum**, LOUISE	Philadelphia, Penna.	1879
SCOTT-**Haensler**, A. V.	Philadelphia, Penna.	1875
SEABROOK, ALICE M.	Philadelphia, Penna.	1895
SECHRIST, CORA STALLING	Canton, Ohio.	1896
SHARPLESS, ANNA P.	Philadelphia, Penna.	1889
SHERMAN, JEANNETTE HURD	Elgin, Ill.	1899
SHERMAN, MARY H.	Brookfield, Mass.	1891
SHIMER-**Thompson**, IDA M.	Brattleboro, Vt.	1885

SHOLLY, AGNES	Shamokin, Penna.	1897
SHROM, LAURA GARDINER	Pittsburg, Penna.	1898
SIBLEY-**Lee**, FLORENCE M.	Philadelphia, Penna.	1884
SIMPSON, J. PHANDORA	Christianburg, Va.	1898
SLAUGHTER, B. ROSALIE	Lynchburg, Va.	1897
SMILEY, VIRGINIA W.	San Francisco, Cal.	1897
SMITH, CAROLINE E.	Moylan, Penna.	1883
SMITH, HILA W.	Guthrie, Oklahoma.	1886
SMITH, MARY HOPKINS	Parkesburg, Penna.	1896
SPENCER, CAROLINE E.	Colorado Springs, Col.	1892
SPIEGLE, GRACE E.	Philadelphia, Penna.	1898
ST. JOHN, E. QUINTARD	Philadelphia, Penna.	1900
STANTON, ANNA M.	New Stanton, Penna.	1897
STEINMETZ, OLIVE B.	Braddock, Penna.	1900
STERLING, KATE L. S.	New York City, N. Y.	1886
STEVENS, EDITH G.	Coudersport, Penna.	1890
STEWART-**Cogill**, LIDA M.	Philadelphia, Penna.	1890
STOCKTON, SARAH	Indianapolis, Ind.	1882
STOECKEL, LOUISE M.	Wilkesbarre, Penna.	1890
STORM, KATHERINE L.	Philadelphia, Penna.	1893
SYLVESTER, ELLA ADAMS	Lisbon Falls, Me.	1900
TAFT, MAUDE EMILIE	Keene, N. H.	1900
TAPPAN, LUCY N.	Philadelphia, Penna.	1886
THOMAS, ADA R.	Washington, D. C.	1893
THOMPSON, H. ADELINE	Bridgeport, Conn.	1893
THOMPSON, HANNAH M.	Wilmington, Del.	1883
THOMPSON, MARY IRVIN	Lemont, Penna.	1898
TITLOW, BENNETTA D.	Springfield, Ohio.	1891
TOPHAM, MARY E.	Adirondack Sanitarium, N. Y.	1894
TYRRELL, ESTHER M.	Canton, Ohio.	1894
TYSON, SARAH FITZWATER	Norristown, Penna.	1889
VAN GASKEN, FRANCES C.	Philadelphia, Penna.	1890
VAN HORN, CAROLINE	Eaglewood, N. J.	1893
VINCENT, CHARITY J.	Allegheny, Penna.	1882
WALKER, DELLA M. S.	Poland, Ohio.	1894
WALKER, GERTRUDE A.	Philadelphia, Penna.	1892
WARD, LETTIE ALLEN	Camden, N. J.	1898
WARD, MARY C.	Philadelphia, Penna.	1895
WATERMAN, HELEN J.	San Diego, Cal.	1897
WATERMAN-**Wyeth**, EMILY	Philadelphia, Penna.	1887
WATSON, FLORENCE HULL	Norristown, Penna.	1892
WEBB, ELLA S.	Oxford, Penna.	1885
WEIDNER, FRANCES	Chester, Penna.	1888
WEINTRAUB, S. LOUISE	Philadelphia, Penna.	1883
WELSH, LILIAN	Baltimore, Md.	1889

WENZEL, MARY	Philadelphia, Penna.	1897
WERNER, MARIE B.	Philadelphia, Penna.	1880
WEST, CHARLOTTE C.	Philadelphia, Penna.	1894
WESTBROOK, HENRIETTA P.	Philadelphia, Penna.	1880
WHITE, AILEEN D.	Robbinsville, N. J.	1899
WHITE, AMY E.	Coudersport, Penna.	1897
WHITE, FRANCES EMILY	Philadelphia, Penna.	1872
WHITEHEAD, EUGENIA	Mt. Holly, N. J.	1892
WHITTEN, EMILY G.	Philadelphia, Penna.	1894
WILBUR, SARAH H.	Springfield, Mass.	1885
WILCOX, MARY R.	Cynwyd, Penna.	1891
WILEY-**Anderson**, CAROLINE V.	Philadelphia, Penna.	1878
WILLIAMS, RACHEL A.	Philadelphia, Penna.	1895
WILLIAMS-**Theodorovitch**, EMMA M.	Philadelphia, Penna.	1885
WILLIAMS-**Vanderbeck**, SARA J.	Fort Lee, N. J.	1890
WILLIAMSON, KATHARINE A.	Philadelphia, Penna.	1887
WILLITS, MARY	Norristown, Penna.	1881
WILSON, BERTHA	Columbus, Ohio.	1896
WILSON-**Swan**, RHUY H.	Canton, China.	1893
WILSON-**Young**, MARY T.	Philadelphia, Penna.	1896
WITMER, EVELYN	Philadelphia, Penna.	1900
WOLCOTT, GRACE	Boston, Mass.	1884
WOLFENDER-**Battershall**, M. H.	Attleboro, Mass.	1879
WOODBY-**McKane**, ALICE R.	Savannah, Ga.	1892
YHLEN-**Olsen**, CHARLOTTE A.	Philadelphia, Penna.	1873

HONORARY MEMBERS.

Name and Residence.	*Where Graduated.*
ANGELL, ANNA A., Boston, Mass.	College of N. Y. Infirmary.
AVERY, ALIDA C., San Jose, Cal.	N. E. F. Med. Col., Boston, Mass.
BERLINERBLAU, FANNY, Boston, Mass.	University, Berne, Switzerland.
CALL, EMMA L., Boston, Mass.	University of Michigan.
DEVOLL, SARAH W., Portland, Me.	N. E. F. Med. Col., Boston, Mass.
HUSEN, FLORENCE, New York City, N.Y.	University of Michigan.
LAWRENCE, ANNA F., Louisville, Ky.	N. E. F. Med. Col., Boston, Mass.
LOTHROP, HARRIET W., Philadelphia.	Zürich, Switzerland.
MOREY-**Errant**, NETTIE D., Chicago, Ill.	W. Med. College of Chicago.
MORTON, HELEN, Boston, Mass.	N. E. F. Med. Col., Boston, Mass.
PECKHAM, ADELAIDE W., Philadelphia.	College of N. Y. Infirmary.
POPE, C. AUGUSTA, Boston, Mass.	N. E. F. Med. Col., Boston, Mass.
POPE, EMILY F., Boston, Mass.	N. E. F. Med. Col., Boston, Mass.
POST-**Van Orden**, KATE, San Francisco.	University of California.
SHERWOOD, MARY, Baltimore, Md.	Zürich, Switzerland.
SHUEY, SARAH J., Berkley, Cal.	University of California.
WARNER, HELEN F., Detroit, Mich.	University of Michigan.
WEBSTER, HELEN W., New Bedford, Mass.	N. E. F. Med. Col., Boston, Mass.
WILLIAMS, ANTOINETTE, Louisville, Ky.	University of Michigan.
ZAKRZEWSKA, MARIE E., Boston, Mass.	Cleveland Med. College, Ohio.

IN MEMORIAM.

Name.	Date of death.	Residence.	Class.
Abbott, Lucy M. . . .	1875	New York City, N. Y.	1865
Adams, Anne S. . . .	1886	McClenny, Fla.	1873
Adams, Charlotte G. . .	....	Boston, Mass.	1853
Adams, Harriet . . .	1886	Palmyra, N. Y.	1859
Aldrich, Olive Dewey .	1896	Philadelphia, Penna.	1874
Audenried, Ada Howard .	1898	Philadelphia, Penna.	1892
Bailey, Mary M. . . .	....	Pennsylvania.	1859
Baker, Sibella F. . .	1879	Chicago, Ill.	1870
Baker, Strathmore M. C. C.	1892	Philadelphia, Penna.	1890
Barnes, Ella E. . . .	1898	Alabama.	1893
Barton, Amy S. . . .	1900	Philadelphia, Penna.	1874
Bates, Elizabeth H. . .	1898	Portchester, N. Y.	1854
Baugh, Elizabeth P. . .	1889	Ashland, Penna.	1857
Belcher, Harriet . .	1887	Santa Barbara, Cal.	1879
Beverley, Julia A. . .	1876	Providence, R. I.	1853
Bodley, Rachel A. . .	1888	Philadelphia, Penna.	1879
Bradley, Melissa A. . .	1878	Wilkesbarre, Penna.	1872
Brook-**Smith**, Harriet .	1896	Austin, Texas.	1886
Browne, Jennie G. . .	1877	Chicago, Ill.	1870
Canavin, Margaret C. .	1888	Philadelphia, Penna.	1886
Case, Mary W. . . .	1889	Lansingburg, N. Y.	1881
Cleveland, Emeline H. .	1878	Philadelphia, Penna.	1855
Collins-**Jones**, Elizabeth .	1896	Philadelphia, Penna.	1856
Cook, Frances A. . . .	....	San Francisco, Cal.	1863
Coon, Sarah A. . . .	1881	New York City, N. Y.	1868
Curry, Ida F. . . .	1891	Boston, Mass.	1888
Denlinger, Eliza H. . .	1883	Portland, Oregon.	1883
Dodson, Caroline M. . .	1898	Philadelphia, Penna.	1874
Douglass, Maria C. . .	....	Burmah.	1882
Du Bois, Emilie B. . .	1884	Philadelphia, Penna.	1878
Eagleson, Jennie R. M. .	1894	Meadville, Penna.	1886
Eckhardt, Mary A. . .	1887	West Virginia.	1876
Eddowes, Anna . . .	1890	Philadelphia, Penna.	1876
Ellinger-**Piersol**, Minna .	1871	Philadelphia, Penna.	1854
Ellis, Hannah W. . .	....	Philadelphia, Penna.	1853
Ellis, Susannah H. . .	....	Wm. Penn P. O., Penna.	1852
Fearing, Sarah J. . .	1896	Denver, Col.	1890
Fleming, Lulu C. . . .	1895	Africa.	1895

Name.	Date of death.	Residence.	Class.
FORBES, ELIZABETH E. F.	1877	Wilmington, Del.	1877
FUSSELL, REBECCA L.	1894	Media, Penna.	1858
GABLE, ELIZABETH	1897	Philadelphia, Penna.	1890
GERRY, RUTH A.	1877	Ypsilanti, Mich.	1865
GILCHRIST, BEATRICE	1881	Edinburgh, Scotland.	1878
GRAVES, ELLEN T.	1892	Kansas City, Mo.	1883
GREENAWALT, W. M.	1874	Lebanon, Penna.	1871
GREENBANK, ELIZABETH H.	1895	Philadelphia, Penna.	1888
GREEN-**Cheney**, LUCILLA W.	1878	Nynee Tal, India.	1875
HATCHETTE, FRANCES	1900	Philadelphia, Penna.	1886
HENDERSON, MARY A.	1880	Philadelphia, Penna.	1878
HIBBERD, SARAH A.	1883	Rochester, N. Y.	1870
HOCHMAN, GEORGINE I.	1898	Philadelphia, Penna.	1896
HOWARD, SOPHIE E.	1893	Fairport, N. Y.	1879
HUGHES, DEBBIE A.	1861	Charleston, Penna.	1856
INGERSOLL, ELLEN	1888	Canton, Ill.	1874
IRISH, DELILA S.	1878	Davenport, Iowa.	1868
JACKSON, MARY K.	1897	Philadelphia, Penna.	1894
JOSHEE, ANANDIBAI	1887	Poona, India.	1886
JUDSON, ELIZA E.	1880	Staten Island, N. Y.	1872
KANE, HARRIET A.	1896	Kane, Penna.	1885
KEITH, NELLIE L.	1884	Geneva, N. Y.	1871
KENDRICK, EMMA J.	1874	Greenfield, Mass.	1873
KING, LUCRETIA	1895	Little Britain, Penna.	1885
LORD, HELEN A.	1900	Northampton, Mass.	1896
MCCLELLAND-**Dunlap**, G. T.	1893	Leland, Mich.	1881
MCDANIEL, ADDIE H.	1887	Isric, N. H.	1881
MARBOURG, W. R. W.	....	Johnstown, Pa.	1869
MARTIN-**Rae**, ADELINE	1899	Pennsylvania.	1893
MELLEN, ELIZABETH S.	....	Philadelphia, Penna.	1859
MINNIS-**Homet**, MARIA	1892	Homet Ferry, Penna.	1853
MITCHELL, FRANCES G.	....	New York City, N. Y.	1852
MITMAN, ELSIE	1886	Freeburg, Penna.	1882
MOON-**Andrews**, ORIE R.	....	Scottsville, Va.	1857
MORGAN, MARTHA	1894	Harrisburg, Penna.	1882
NEEDHAM, ELIZABETH W.	1877	Providence, R. I.	1875
NICHOL, RACHEL J.	1881	Zürich, Switzerland.	1879
NORTHROP, KATHERINE	1899	Philadelphia, Penna.	1889
OSBORN, MARY E.	1896	Canton, Ohio.	1883
PARRY, SUSAN	1890	Doylestown, Penna.	1858
PAYNE, JANE	1882	Mt. Vernon, Ohio.	1861
PERRY, ALICE CHRISTINE	1898	. . . . .	1872
PRESTON, ANN	1872	Philadelphia, Penna.	1852
PRICE, AMANDA C.	1881	Eagleville, Penna.	1871

Name.	Date of death.	Residence.	Class.
RAYMOND, AURELIA F. D. .	1886	Syracuse, N. Y.	1864
RICE, ANNIE E. . . .	1884	Washington, D. C.	1883
ROBINSON, MARY E. . .	1889	Salem, N. J.	1876
ROGERS, PHŒBE A. . .	1892	Blossburg, Penna.	1883
RUTAN, SARAH J. . . .	1894	Allegheny City, Penna.	1883
SAWIN, MARTHA A. . .	1866	New England.	1852
SCARLETT-**Dixon**, MARY J. .	1900	Pennsylvania.	1857
SCHULTZE, MATILDA . .	1896	Cincinnati, Ohio.	1874
SEELYE, MARY T. . . .	1875	Calcutta, India.	1870
SEWARD, SARA C. . . .	1891	Allahabad, India.	1871
SHATTUCK, ELIZABETH G. .	1865	Philadelphia, Penna.	1864
SHEETS-**Mercer**, EUGENIA C.	1900	Pennsylvania.	1876
SMITH, CYNTHIA . . .	1887	Rochester, N. Y.	1869
SMITH-**Wells**, CAROLINE N. .	1885	Topeka, Kansas.	1868
SMITH-**Wilder**, M. E. . .	1892	Spring Lake, N. J.	1855
SPERRY, EDLA . . .	1880	Pittsburg, Penna.	1871
STACKHOUSE, SUSAN P. . .	1888	Fallsington, Penna.	1883
STINSON, MARY H. . .	1889	Norristown, Penna.	1869
STONE, ELSIE P. . . .	1880	Oakland, Cal.	1867
STUBBS, FLORENCE P. . .	1889	Wilmington, Del.	1881
SUTTON, EMMA . . .	....	Providence, R. I.	1886
TAYLOR-**Gordon**, JENNIE M.	1898	Malarge, Africa.	1892
THOMAS, ELIZA L. S. . .	....	Alliance, Ohio.	1855
TOMPKINS, AMELIA . .	1900	New York.	1864
UNDERWOOD, CATHERINE J. .	1873	New York.	1859
VOWLER, MARY G. . .	1896	Philadelphia, Penna.	1894
WAY, PHEBE M. . . .	1876	Baltimore, Md.	1852
WHITAKER, ELLA M. . .	1881	New Haven, Conn.	1877
WILMARTH, PHILA O. . .	1888	Rodman, N. Y.	1855
WILSON, MARY E. . . .	1898	Lancaster, Penna.	1868
WILSON, PHEBE . . .	....	Hamorton, Penna.	1857
WOOLSTON, HENRIETTA B. .	1887	Mt. Holly, N. J.	1877
YOUNG, GEORGIANA E. . .	1887	Niagara Falls, N. Y.	1878
ZOOK-**Schæffer**, ELLEN E. .	1884	Philadelphia, Penna.	1873

NOTE.—The Corresponding Secretary, MARY V. MITCHELL-GREEN, M.D., Swarthmore, Pa., will be glad to receive any corrections or additions to the above lists.

MINUTES

OF THE

TWENTY-SIXTH ANNUAL MEETING

OF THE

ALUMNÆ ASSOCIATION

OF THE

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA,

Held at the College Building, North College Avenue and Twenty-first Street, Philadelphia, May 17 *and* 18, 1901.

THE meeting was called to order by the President, Dr. Elizabeth L. Peck. The first business in order was the REPORTS OF OFFICERS OF THE ASSOCIATION.

REPORT OF THE RECORDING SECRETARY.

The minutes as approved by the Executive Board were published in the volume of the *Transactions* for 1900, copies of which were sent to all members of the Association. Because of the especially important character of the publication of last year, extra copies were printed and placed on sale at the College. The price of each copy is twenty-five cents, which is very slightly above the cost of production. The volume can be obtained by addressing the Recording Secretary at the College.

GERTRUDE A. WALKER,
Recording Secretary.

It was moved and seconded that the report be accepted. Carried.

REPORT OF THE CORRESPONDING SECRETARY.

Letters of thanks for copies of the *Transactions of the Alumnæ Association* for 1900 have been received from the New York Academy of Medicine, New York Infirmary for Women and Children, College of Physicians and Surgeons of Pennsylvania, Library of Surgeon-General at Washington, and Dr. Claribel Cone, of Baltimore. A letter from Dr. Frances A. Rutherford, of the class of '68, contained her greeting for the Association and regrets that she was unable to be present at the meeting. The following members sent in resignations: Dr.

Rebecca C. Hallowell, of California, Dr. Emma C. Waln, of Williamsport, and Dr. Anna Jackson-Ferris, of Philadelphia. The annual dues sent to the Treasurer amounted to $442.

Respectfully submitted,

MARTHA G. K. SCHETKY,
Corresponding Secretary.

It was moved and seconded that the report be accepted. Carried.

REPORT OF THE TREASURER.

Annual Report of Anna P. Sharpless, Treasurer, in account with the Alumnæ Association of the Woman's Medical College of Pennsylvania.

RECEIPTS.

To balance on hand at last annual report	$78 38
To Dr. M. G. K. Schetky, Corresponding Secretary, annual dues	442 00
To interest on deposits	5 04
To deficit	6 96
	$532 38

DISBURSEMENTS.

By Dr. Gertrude A. Walker, Rec. Sec'y, for 1899	$25 00		
By Dr. E. C. Keller, Chairman Com. on Education	26 69		
By Dr. E. L. Peck, for Library Committee	26 69		
		$78 38	
By Dr. E. L. Peck, for Ex. Com., postage		6 51	
By Dr. M. G. K. Schetky, Corresponding Secretary		20 21	
By Dr. E. C. Jones		1 84	
By Miss C. C. Guyer, type-writing		5 60	
By Augustin & Baptiste, lunch		45 00	
By L. C. Alexander, stenographer		10 00	
By A. S. Pritchard, engrossing testimonial on death of Dr. Amy S. Barton		5 00	
By Wm. J. Dornan, printing	$10 00		
" " " *Transactions*	303 86		
" " wrappers	4 50		
		318 36	
By Dr. Gertrude A. Walker, Rec. Sec'y, postage.	$16 48		
" " " " on account	15 00		
		31 48	
By balance due Dr. Gertrude A. Walker, Recording Sec'y		10 00	
			$532 38

Audited and found correct, May 17, 1901.

JOHANNA BAPTISTELLA LEO.
SARAH H. LOCKREY.

The report was accepted.

REPORT OF EXECUTIVE COMMITTEE.

The first meeting of the Executive Committee was held May 31, 1900, at 819 N. Fortieth Street. Dr. Elizabeth L. Peck presided. The programme for the meetings of 1901 was discussed; also plans for completing the Fellowship Fund, which at the last meeting of the Asso-

ciation had begun to materialize. Dr. Bundy was appointed by the Executive Board to draw up resolutions and send them to the families of deceased members.

The second meeting was held on June 20th, at 819 N. Fortieth Street, Dr. Elizabeth L. Peck, the President, in the chair. Dr. Rachel R. Williams was appointed to fill the vacancy on the Fellowship Committee. The programme was again discussed.

The third meeting of the Executive Committee was held on October 3, at 819 N. Fortieth Street. Dr. Peck presided. The Corresponding Secretary reported having sent letters to those who were asked to take part in the programme. It was moved and seconded that two copies of the *Transactions* for 1900 be bound and presented to the College library and the Alumnæ library.

The fourth meeting was held at 819 N. Fortieth Street. Dr. Peck presided. Dr. A. Helena Goodwin was elected to fill the vacancy on the Committee of Award of the Fellowship Fund caused by the resignation of Dr. Anna M. Galbraith. Dr. Walker was authorized to dispose of extra copies of the *Transactions* for 1900 at twenty-five cents each. Great inconvenience is caused the Programme Committee by the members who delay answering invitations to write papers, or who accept and then decline just before the meeting.

The last meeting of the Executive Board was held on April 29, 1901, at 1104 Pine Street, Dr. Peck presiding. The programme for the meeting was arranged and the Fellowship Fund discussed. An excess having been collected for the portrait fund, a certain number of the contributors signified their willingness to allow their subscriptions, amounting to forty dollars, to revert to the Fellowship Fund.

MARTHA G. K. SCHETKY,
Secretary of Executive Committee.

It was moved and seconded that the report be accepted. Carried.

REPORT OF BOARD OF CENSORS.

The Censors have received the following letter:

MAY 16, 1901.

To the Board of Censors of the Alumnæ Association of the Woman's Medical College of Pennsylvania:

The following members of the Association have been repeatedly written to concerning their membership. None have responded. I submit their names for your consideration.

Minnie C. Archer, 1894, Houston, Texas.
Sophia Ballard-Bushnell, 1899, Wisconsin.
Augusta B. Cawood, 1894, Williamsport.
Rachel A. Dickey, 1867, 248 E. Girard Avenue.
Anna M. Hand, 1890, Cape May City, N. J.
Caroline Hetrick, 1894, Putneyville, Pa.
Frances J. Trout, 1893, Lancaster, Ohio.
Augusta G. Williams, 1894, Brookline, Mass.

MARTHA G. K. SCHETKY,
Corresponding Secretary.

The Censors recommend that these delinquents be informed that the Association will be obliged to observe the rules prescribed by the Constitution in regard to long-standing dues.

The Board of Censors also recommend the admittance to active membership of the following physicians:

Elizabeth Comstock, Mary R. Noble, Mary Grace Haskins, Belle A. Schisler, Josephine P. W. Hildrup, Helen R. Howe, Caroline E. Smith, Mary Holmes, Annie L. Connor, Harriet I. Noble, Eleanor F. Preston.

ELIZABETH R. BUNDY,
Chairman.

It was moved and seconded that the report of the Board of Censors with its recommendations be adopted. Carried.

The next business in order was the REPORTS OF STANDING COMMITTEES.

REPORT OF COMMITTEE ON EDUCATIONAL FUND.

In Treasury, 1900	$616 70
Interest on same	18 00
Interest on note	7 50
Received from Treasurer	26 69
In treasury, 1901	$668 89

ELIZABETH C. KELLER,
Chairman.

It was moved and seconded that the report be accepted. Carried.

REPORT OF COMMITTEE ON FELLOWSHIP.

During the summer of 1900 your Committee began its work by endeavoring to establish local centres in large cities, hoping that personal influence would give better results than letters and circulars have done. This method has not brought the hoped-for results. Dr. Hersom writes of her failure to arouse interest, and regrets that Maine is so backward. In Boston and other cities we find the same lack of interest. The outlook was rather discouraging until the Executive Committee decided that the funds subscribed during the winter of 1900, prior to the annual pledges for five years, were to be placed to the use of this Committee. A number of subscribers to that fund have expressed a desire that their subscriptions be placed to the use of this Committee. With this assurance and new pledges the Committee then prepared the circulars which have been sent to every graduate of the Woman's Medical College. The subscriptions thus made have brought the amount up to the required five hundred dollars ($500). We then published the announcement in a medical journal (*American Medicine*) that we were prepared to award a Fellowship for 1901. A second circular, defining the conditions under which the Fellowship will be awarded, was also prepared and is on file.

The Committee respectfully presents for your consideration and action at a future meeting (the next annual) the following:

The Constitution now provides for an annual assessment of two dollars ($2.00). We submit that the annual dues be raised to three dollars ($3.00), one dollar ($1.00) of which shall be devoted to the Fellowship Fund.

Inquiry has shown that this method has proved the most reliable way of securing funds.

The response to the last appeal for additional three-year pledges has brought, as yet, but few returns—scarcely more than sufficient for printing.

Therefore, if this important undertaking is to continue it must be placed on a more permanent and reliable basis, and the Committee presents the foregoing for your consideration.

The financial report to date is incomplete, as all pledges have not yet been paid.

Cash in hands of Dr. Sharpless to credit of this Committee . .	$259 01
Surplus from portrait fund	40 00
Cash in bank	382 00
Cash for three-year pledge	25 00
Cash for five-year pledge (not yet paid)	75 00
	$781 01
Unpaid bill for printing circulars and postage	6 50
Net amount on hand	$774 41

BERTHA LEWIS,
Chairman.

It was moved and seconded that the report be accepted. Carried.

REPORT OF COMMITTEE ON AWARD OF FELLOWSHIP.

The Fellowship Committee issued a circular stating that a Fellowship would be awarded for the year 1901–1902, and fixing the conditions. The applications for this Fellowship were all in the hands of the Committee on Award on May 10, 1901.

The Committee unanimously elected Dr. Ruth Webster Lathrop as the first Fellow of the Alumnæ Association of the Woman's Medical College of Pennsylvania. The Committee feels gratified, and congratulates the Association that it has so good a candidate for its first Fellowship. Dr. Lathrop is an A.B. of Wellesley College, an M.D. of the Woman's Medical College of Pennsylvania, and has done advanced work in anatomy and physiology in the Philadelphia School of Anatomy, Harvard University, the University of Pennsylvania and in Johns Hopkins University. She desires to pursue advanced work in anatomy and physiology. Dr. Lathrop is strongly endorsed.

The circulars sent out by the Fellowship Committee announced a Foreign Fellowship. This Committee earnestly recommends that the Fellow be permitted to choose the university at which she shall do her work from among American and foreign universities.

LILIAN WELSH,
Chairman.

It was moved and seconded that the report be accepted with its recommendation, namely: that the Fellowship shall imply study either in America or abroad, as the Fellow may choose.

After discussion this motion was carried.

Dr. Welsh announced a recent contribution of $30 to the Fellowship Fund.

Report of Committee on Library.

Received from Mr. Petit (for Dr. Hatchette, deceased) . . .	$12 25
Received from Treasurer of Alumnæ Association	26 69
Total amount on hand	$38 94

Emma E. Musson,
Chairman.

It was moved and seconded that the report be accepted. Carried.

Dr. Clara Marshall: To show the spirit of our present graduating class, I would like to state that a member of the class has made a donation of $25 to the College library, which donation she means to keep up yearly.

Report of Committee on Necrology.

No report was rendered.

Report of Committee on Entertainment.

I have a very informal report to make. The guests invited by the Association were the Presidents of the New Century Club and Browning Society. I would appeal to the alumnæ to hand in their names before the evening of the dinner, otherwise it is impossible to arrange without delay and awkwardness to every one at the last moment. It would be much easier, and there would be no friction, if the alumnæ would make a little extra effort to give their names early. One hundred and six subscriptions had been received at four o'clock. Even then some members not expected had to be provided for at the last moment, although the tables were laid for 108.

As I retire from the Entertainment Committee this year, I would like to say to the Association that those who have been associated with me have done such very good work that the Association may feel that the future work of this Committee will be well attended to

Elizabeth R. Bundy,
Chairman.

The report was accepted and a vote of thanks tendered the Committee.

The next business in order was the Reports of Special Committees.

Report of Committee on Preventive Medicine.

The only meeting held by your Committee was called March 19, 1901, to consider a communication from the Class of 1901. Those

present at the meeting were Drs. White, Lewis, Van Gasken, and Richardson. From the only absent member of the Committee, Dr. Ingraham, a letter was received saying that whatever disposition the Committee made of the funds in their possession would meet with her entire approval. Following is the communication from the class of 1901:

DEAR DR. RICHARDSON:

At a recent meeting of the class of 1901 it was decided to ask the Alumnæ Association to allow us to add our fund of three hundred dollars to that of the Association, the whole to be expended in the purchase of baths for the gymnasium. With this addition the Chair of Preventive Medicine will be complete.

The most satisfactory estimate which the Committee has been able to secure is from Mr. Roydhouse, who agrees to put in the baths for twelve hundred dollars.

Hoping that the Alumnæ Association may see fit to dispose of their fund in this way, I am, Sincerely yours,

JULIA VAN DER VEER,
Secretary of Class of 1901.

Your Committee unanimously agreed to accept the three hundred dollars tendered by the class of 1901, which, with the amount of $990.64 now held for the Alumnæ, gives a total of $1290.64.

A joint meeting of this Committee and a Committee from the class of 1901 was held on March 26, 1901, to consider plans and estimates for the construction of baths in the basement of the gymnasium, and for the erection of a tablet to the memory of Dr. Stackhouse, to whose endeavors the existence of the gymnasium is largely due.

Plans and estimates were agreed upon by the Committees and were submitted, through the great kindness of Mr. Vauclain, to the Executive Committee of Trustees of the College. The contract has been signed for the construction of the baths and for the provision of a memorial tablet, including inscription, the total cost of all amounting to $1245.00.

IDA E. RICHARDSON,
Chairman.

It was moved and seconded that the report be accepted. Carried.

Dr. Van Gasken, who presented the report for the Committee, said that the Committee hoped there would be an expression of opinion as to where the tablet should be placed.

Dr. Marshall moved that the memorial tablet be placed in a conspicuous place in the gymnasium. This motion was seconded and carried.

REPORT OF COMMITTEE ON ALUMNÆ REPRESENTATION.

No report was rendered.

REPORT OF COMMITTEE ON THE ANN PRESTON FUND.

RECEIPTS.

Contributions	$266 70

EXPENDITURES.

Miss Carol H. Beck, painting portrait	$250 00	
Dr. Anna P. Sharpless, printing of circulars . . .	3 50	
Dr. E. L. Peck, postage on circulars	4 50	
Other postage	2 70	
Type-writing	1 50	
J. E. McClees & Co., for transporting portrait twice to the Academy of Music and to the College, and for the use of easel	4 50	
		$266 70

CLARA MARSHALL,
Chairman.

The report was accepted and the Committee discharged.

REPORT OF THE COMMITTEE ON COMMENCEMENT.

No report was rendered, and Dr. Marshall spoke as follows with reference to this Committee: When I discovered that there was a Committee on Commencement I interviewed the Chairman, who evidently did not understand that the Committee was still in service. I would be glad if this Committee could be appointed to stand for a few years, though not perhaps permanently as a standing committee. This matter of securing an audience at the Academy of Music is very important. It would be just as easy to give diplomas here at the College. The whole object in having a public Commencement is to advertise the College. Such advertisement is entirely legitimate. When I looked at the empty seats, after all the efforts in the Dean's office, it was dampening to my spirits, and it took more than the graceful address of Dr. Bundy and the eloquence of Dr. Talcott Williams to restore them. The Association will remember that a few years ago it was one of the functions of this "Committee on Commencement" to also suggest to the Faculty that some one outside of the Faculty might be invited to make an address at the Academy of Music and add interest to the proceedings. Although this idea was not alone original with the Alumnæ Association, for the same idea had occurred to the Faculty, yet as the Association made it a special request, would it not be in order for this Association to send a vote of thanks to Dr. Talcott Williams for his address? I move that the Alumnæ Association send to Dr. Talcott Williams a resolution of thanks and appreciation for his able and eloquent address given on the occasion of our Annual Commencement.

The motion was seconded and carried.

Dr. Marshall: I also move that a Committee on Commencement be appointed for next year. Seconded.

Dr. Lockrey: Such a Committee was appointed for two years, and then dropped, but last year the Dean asked me to act as a voluntary committee. We distributed over 800 tickets. This year nothing was done.

Dr. Clara Marshall: I made a motion that there be a committee

appointed to see if we cannot secure an audience. There are so many people who want to come. It is a pity we cannot reach them.

Dr. Fleisher: Would it not be well for the Philadelphians who have a large number of acquaintances to have sent to them tickets for distribution among people who would desire to come?

Dr. Marshall: If a list of names were sent to the Dean's office it would be a better plan.

Dr. Marshall's motion was carried. The President subsequently appointed the Committee. (See page 6.)

Report of the Committee on Medical Information.

Owing chiefly to late appointment, the Committee are unable to make the kind of report they had hoped to present. They have not done more than outline a plan of work for another year. They think it desirable to collect information regarding opportunities for hospital service available to women, and also to gather data pertaining to opportunities for post-graduate work for women both in this country and in foreign countries. They recommend the publication of such information in the form of bulletins which shall be mailed to all members of the Association.

In addition, the Committee suggest the advisability of informing all colleges of medicine for women that a Bureau of Medical Information has been established at this College and of soliciting requests for information of general interest to women physicians. The Committee would be glad to receive authority to collect, publish, and distribute information as suggested, and to this end they ask that an appropriation of $25 be made by the Association. If more or less than this amount is found to be necessary to the success of this undertaking, the Committee will give adequate reasons in their report of next year.

Gertrude A. Walker,
Chairman.

Dr. Welsh moved that the report be accepted, together with its recommendation for an appropriation of twenty-five dollars. Seconded and carried.

Dr. Bundy suggested that whatever literature this Committee published should be sent to Dr. Talcott Williams, with a copy of last year's *Transactions*. Seconded and carried.

Report of Nominating Committee.

The Committee submit the following ticket:

For President, Dr. Calista V. Luther.
For First Vice-President, Dr. Ella B. Everitt.
For Second Vice-President, Dr. Bertha Lewis.
For Recording Secretary, Dr. Gertrude A. Walker.
For Corresponding Secretary, Dr. Mary V. Mitchell-Green.
For Treasurer, Dr. Anna P. Sharpless.
For Director: For three years, Dr. Emma E. Musson.

For Censors: For five years, Drs. Elizabeth C. Keller, E. R. Bundy, Lucy N. Tappan.

For Committee on Education: For five years, Dr. Clara Marshall.

For Committee on Fellowship: For five years, Dr. Elizabeth C. Keller.

For Committee on Library: For five years, Dr. Caroline M. Purnell.

For Committee on Necrology: Dr. Alice M. Hackley.

For Committee on Entertainment: Dr. Sarah H. Lockrey.

CALISTA V. LUTHER,
Chairman.

The report of the Nominating Committee was accepted.

Balloting resulted in the election of the ticket submitted by the Committee.

Next in order came UNFINISHED BUSINESS.

The President announced that last year there was a proposal to change the method of publishing the *Transactions*. On motion the business was referred to the Executive Committee.

Next in order came NEW BUSINESS.

Dr. Leo: I have a matter to bring before the Association which will probably necessitate a change in the Constitution.

For those who come from out of town to attend these meetings I think a great deal of time is consumed by business which might be relegated to the different committees having the business in charge. Those of us who wish to inform ourselves of the business would be willing to read the report as printed. Our entire time could then be devoted to the educational work for which the Association stands.

Dr. Peck: The change can be made by amendment to the By-laws. An amendment to the By-laws, however, can only be made by having been proposed at a previous meeting of the Executive Board. It therefore cannot be discussed now. Time would be saved if Dr. Leo would send to the Executive Board this suggestion and propose the amendment. It can then be brought up next year and voted upon.

Dr. Walker stated for Dr. Reynolds that there were in the rooms of the building four or five dozen cups and saucers purchased some years ago for the use of the Association, but which since the lunches had been served by a caterer were useless. It was proposed therefore that they be given to the Maternity on Washington Avenue. Dr. Walker moved that the consideration of the subject and decision be referred to the Executive Committee. Seconded and carried.

Dr. Sharpless wished to know how long the Association Treasurer should keep receipted bills.

It was moved and seconded that the matter be referred to the Executive Committee. Carried.

Dr. Heiberger (for Dr. Luther, Chairman of the Nominating Committee): It is difficult for the Nominating Committee to meet the several members of the Committee who reside outside of the city. We are therefore not in touch with them, and feel that all the members of this Committee should be selected from Philadelphia.

Dr. Heiberger made a motion that the Nominating Committee

should be composed of members who live in the city of Philadelphia. This was seconded.

Dr. Bitting-Kennedy: While it is well to have the Committee on Entertainment residents of Philadelphia, I think it is for the good of the Association that the women living outside the city should have something to say about the work of the Association. The Alumnæ Association represents the College to the world, and the more it can be broadened the better.

Dr. Griscom: I think it would be a great mistake to have the Nominating Committee composed exclusively of resident members.

Dr. Fleisher: Some of the best officers of the Nominating Committee have been those living outside of the city. I think the members should be made up of those out of town as well as those at home.

Dr. Bundy: The Committee can do a great deal of work by correspondence, and there is a whole year for the work. That the members should be of those living in the city does not seem to me necessary, and I think it would be a mistake.

A vote was taken upon Dr. Heiberger's motion, and the motion was lost.

Dr. Walker moved that an expression of sympathy be sent to Dr. Bertha Lewis by the Association at this time of great anxiety because of her father's critical illness. Seconded and carried.

It was moved and seconded that the Association offer to Dr. Peck upon her retirement from office a hearty vote of thanks. Seconded and carried.

Dr. Peck: I am sure I appreciate the thanks of the Association, and ask the members to pardon any failure in my effort to do what I could. I have been new at the business, and I think that it is very well that some one who is more familiar with it should follow me. I am sorry that Dr. Luther is not present. It gives me pleasure to introduce the First Vice-President, Dr. Ella B. Everitt.

Dr. Everitt: It is a matter of great regret to me that Dr. Luther is not here to address you. You would have had some very happy remarks delivered in her characteristic way.

Dr. Cotton spoke of the courtesy shown by the Association of Women Physicians in New York in inviting members of colleges in good standing to their meetings and to take part in the discussion of papers. This courtesy had been tendered at the time when the medical meetings had closed their doors to women physicians.

Dr. Walker moved that an expression of greeting be sent from the Alumnæ Association to the Association of Women Physicians in New York. Seconded and carried.

The meeting was then adjourned.

GERTRUDE A. WALKER,
Recording Secretary.

REPORTS.

REPORT ON THE COLLEGE.

By CLARA MARSHALL, M.D.,
DEAN.

Since the last report made to the Alumnæ Association, May, 1900, not only have a number of improvements then anticipated been realized, but the summer vacation will witness alterations destined to add materially to our teaching facilities as well as to the comfort of the students.

Anatomy.

A cold-storage plant was installed last summer, and it has been in satisfactory operation through the past session. During the coming summer the dissecting-room will be supplied with a new non-absorbent floor, which will greatly improve its sanitary condition. The purchase of valuable illustrative material has been authorized, and last, but not least, it is intended to so arrange the roster as to confine the work in the anatomical laboratory to daylight hours.

Pharmacy.

The summer of 1900 marked the provision of a permanent home for the department of Pharmacy, a portion of the Physiological Laboratory (the largest in the College) having been fitted up for the purpose. The appointment of a woman demonstrator of pharmacy has proved to be a source of satisfaction.

Obstetrics.

The earnest desire of the Professor of Obstetrics to secure a permanent home for the out-obstetric department having aroused the interest and enthusiasm of the students, substantial results have followed. An entertainment given by the students in the interest of the department was a financial success. The reflex enthusiasm of those connected with the department of Obstetrics as well as that of the students, was not without influence on the Corporators, who have voted to buy a suit-

able home at an early date and thus to do away with the annoyances and uncertainties incident to the lot of a tenant.

Chemistry.

During the coming summer the Chemical Laboratory will be considerably enlarged to accommodate a growing class and to afford improved facilities for instruction.

Library and Reading-room. Museum.

The removal of the museum has vacated a south room on the first floor, which is now occupied by the library and reading-room, thus affording a quiet, sunny room for reading and study.

This room is ample for present needs, but it is hoped that this will not long be the case. I beg leave to report in this connection that a member of the class of 1901 has contributed twenty-five dollars to the library, with the expectation of continuing the same as an annual donation.

The Museum has been removed to the room formerly called the "North Pathological Laboratory," where pathological material is compactly and conveniently arranged.

Reception-room and Dean's Offices.

The large south room on the first floor, known as the "quiz-room," has been divided into three rooms, which have been fitted up as a reception-room and Dean's offices. This greatly-needed improvement, involving an expenditure of about $800, was made possible by the generosity of individual members of the Board of Corporators.

Surgery.

A Clinical Professor of Surgery has been added to the teaching force, the instruction being confined to the surgical diseases of children.

Gymnasium.

The latest steps in the evolution of a scheme which originated in this Association, viz., the establishment of a Chair of Preventive Medicine, are of interest.

The erection of a new laboratory building having furnished space for a gymnasium, and the interest of the freshman class of 1899–1900 having been especially enlisted, a Fair was held under their auspices in the early fall of 1900. A substantial sum thus obtained was expended in the purchase of necessary apparatus. A member of the class who is an experienced teacher of physical culture was employed as instructor, and I take pleasure in giving her report.

Report of Work Done in the Woman's Medical College Gymnasium, and Description of Apparatus Necessary for a Better Equipment.

A plan for gymnastic work was presented to the classes individually. This consisted in a physical examination, individual corrective work, and class drills in the Swedish, German, and American systems of gymnastics.

Since the opening was late in the year (January 14), the number of students undertaking the work was small, nine seniors, ten juniors, ten sophomores, and ten freshmen. The total number in classes at any one time was twenty-seven. Those who persevered through the entire three months were very much benefited in health and vigor.

Two difficulties presented themselves: the time for the work, two hours per week, was liable to conflict with College work, and the expense, two dollars per month for each individual, debarred a number from entering the classes. It is suggested that the "time" question may be solved by arranging for physical exercise on the weekly schedule. The "expense" item was as small as it could be made to reimburse the instructor for time and work.

The work should be put on the broadest possible basis, and give the students not only individual exercise, carefully prescribed, and a general knowledge of gymnastics, so adding to their health, strength, and physique, but also the ability to adapt the exercises to corrective work in their prospective practice of medicine.

The apparatus purchased by the class of 1903 is of the best and may be regarded as a good beginning. In order to further the work of the next year, the following list is submitted:

Estimates, Narragansett Machine Co.

Eight Sargent combination { chest weights / pulley weights }	$320 00
One quarter circle	24 00
One wrist machine	10 00
One abdominal table	24 00
One vaulting horse	56 00
Two sets stall bars	24 00
Parallel bars, changed or remodelled	5 00
One dozen one pound dumb-bells, with holders	4 75
	$467 75

Respectfully submitted,

AMELIA WEICKSEL.

A fund belonging to the class of 1901, supplemented by a generous contribution from the Committee on the Chair of Preventive Medicine, will be expended for the installation of shower-baths during the summer vacation.

Thus the aims of the Committee on a Chair of Preventive Medicine are being gradually and, in certain directions, completely attained.

But—where is our Museum of Hygiene? And where is our endowed Directorship of Physical Culture? Echo answers, "Where?"

NEEDS.

What is at present the crying need of the College?

I think that every member of our Faculty would agree with the statement that our greatest need is more extended facilities for bedside instruction in medicine and surgery. The method for supplying this want is receiving the earnest thought of Corporators and Faculty.

REPORT OF THE WOMAN'S HOSPITAL.

By ELLA B. EVERITT, M.D.,
PHYSICIAN-IN-CHARGE OF THE WOMAN'S HOSPITAL.

THE record of the Woman's Hospital for the year 1900 furnishes gratifying evidence of continued activity and progress along various lines. Statistically, we note the fact that the number of in-patients treated, viz., 1162, shows an increase of 124 over the preceding year; and that the revenue from patients' board, etc., exceeds that of 1899 by about $3565.

In the Medical Department the greater number and variety of cases have materially increased the value of the service. The Surgical Department, also, has shown a distinct gain. In 1899 the total number of operations performed was 690; in 1900 the total was 828. Of these 88 were abdominal sections—a larger number than in any previous year. Several major operations in general surgery were performed by the Clinical Professor in the public clinics, and in all cases both the mortality and morbidity were low. The conditions for which operation was undertaken included the various ovarian and uterine neoplasms, pyosalpinx, hernia, appendicitis, ectopic gestation, and uterine displacements.

The classification of the abdominal sections is as follows:

Appendectomy	5
Colostomy, inguinal	1
Exploratory incision	5
Herniotomy	7
Hysterectomy	29
Hysterorrhaphy	7
Intra-abdominal shortening of right ligaments	9
Operation for ectopic gestation	6
Operation for fecal fistula	1
Ovariotomy	6
Resection of ovary	1
Salpingo-oöphorectomy, unilateral	21
Salpingo-oöphorectomy, bilateral	12

Among the most interesting sections may be mentioned the following:

CASE I.—L. H. (colored), aged twenty-five years, married, and had had one child. Although there was a strong probability of an existing pregnancy of about three months' duration, the severity of the patient's symptoms called for surgical interference. Accordingly the abdomen

was opened, the appendages of both sides separated from dense adhesions and removed. An ovarian abscess was found on the right side. After the operation the patient suffered from great distention of the stomach and distressing tympany, but eventually made a good recovery, and six months later gave birth to a well-nourished, full-term child which is now living and healthy.

CASE II.—A. McI. presented a somewhat similar subsequent history. She was a married woman, aged twenty-eight years, and had had two children. She was four and a half months pregnant when admitted to the hospital, but was also suffering from a large ovarian tumor which made the abdominal enlargement equal that of a woman at term. The patient was operated upon and a twenty-pound multilocular cyst removed, with no interruption of the pregnancy. Convalescence was entirely uneventful.

CASE III.—R. M. (colored), aged thirty years. Had been married nine years, but had never been pregnant. When admitted she was suffering from a uterine fibromyoma which so completely filled the pelvis that with the congestion of each menstrual period she was unable to micturate, and had to be catheterized. At operation the bladder presented immediately in the abdominal incision and was found to be entirely crowded out of the pelvis, distended, sacculated and adherent to the parietal peritoneum. During a rather lengthy operation—owing to dense and universal adhesions—the bladder lay outside the abdomen and was kept wrapped in gauze wet in hot salt solution. Thirteen hours after the operation the urine was voided naturally, and from that time onward there were no vesical symptoms.

CASE IV.—A. H., aged fifty-six years, was a married woman whose weight on admission was one hundred and seventy pounds. She stated that twenty-seven years previous she had fallen on a pair of scissors which had penetrated the abdominal wall a little to the left of the median line and below the level of the umbilicus. After this injury she had carried three children to term. When admitted she had a ventral hernia, about the size of an ordinary shaddock, on the apex of which was the scar of the old wound. The sac contained a mass of adherent intestine and omentum, and was itself adherent at every point to the pockets which it had made in the thinned-out belly wall. The result of operation was in every way satisfactory, and the patient reported herself with no recurrence a year later.

The work of the Nose and Throat Department deserves especial mention in this report. There have been performed eighty-seven operations belonging to this specialty, and through the efforts of Dr. Musson a handsome piece of electric apparatus has been added to the equipment.

In the Maternity a number of interesting pathological conditions were observed. One patient whose uterus was fibroid gave birth to an anencephalous monster. Low implantation of the placenta occurred twice, and there was one case of placenta prævia centralis, in which both mother and child were saved by internal version and rapid extraction. One infant was born with imperforate anus, and although

inguinal colostomy was done on the second day, the strength of the child was not sufficient to contend against such odds, and it succumbed to exhaustion and peritonitis. Of a pair of twins, one presented very marked myxœdema when born, and gasped but a few times. The other rapidly developed a similar condition and died on the third day after birth.

That the Clinical Laboratory becomes a more important factor from year to year is shown by the report of the Director, in the published Annual Report of the Board of Managers. The total number of examinations made was about 3100. But large as the number is, the value of the work to the clinician and the very thorough way in which it has been carried on cannot be expressed in numerical terms. The study of blood conditions was a special feature during the year, and many interesting observations were made, of which a full report will be made later.

In view of the fact that the calls for teaching material of all kinds are so numerous, the dispensary and public clinics deserve some mention. We have been gratified by the assurance given that the cases provided for the clinical lecturers in medicine and surgery have been quite adequate and satisfactory. All the surgical clinics, with one exception, were in part or wholly operative. We have been especially grateful to those who, by referring cases to the hospital, have helped us to meet the demand to the extent possible in the past year. But we are anxious to do even better in the future, and we believe that the institution can legitimately claim more consideration at the hands of the majority of the women physicians of the city and vicinity. Most of them are indebted to the Woman's Hospital for a greater amount of clinical opportunity than they may at once realize. It seems but reasonable, therefore, that we should look to them to help provide for the students who have followed them those opportunities which they themselves enjoyed through the forethought and interest of others. We would ask that this phase of our work be borne in mind, and that instructive and interesting teaching-cases be referred more generally—remembering that what may be commonplace to the practitioner is often new to the student.

WEST PHILADELPHIA HOSPITAL FOR WOMEN.

By ANNA P. SHARPLESS, M.D.,
PRESIDENT OF THE BOARD OF MANAGERS.

The statistical summary of the work done in the West Philadelphia Hospital for Women during 1900 is as follows:

Number of patients in hospital January 1, 1900	12
Number of patients received during 1900	326
Total number treated in 1900	338
Total number treated in 1899	314
Number of patients discharged during 1900	321
Number of patients treated in dispensary in 1900	1,231
Number of visits to dispensary in 1900	4,709
Number of patients visited at their homes in 1900	562
Number of visits to patients at their homes in 1900	3,386
Total number of prescriptions compounded in 1900	16,832
Number of abdominal sections in 1900	16
Total number of operations in 1900	185
Number of births in hospital in 1900	28
Number of births in out-practice in 1900	98
Number of deaths in hospital in 1900	4
Number of deaths in out-practice in 1900	14

The steady advance of the work done in the hospital is indicated by the figures in the above tabulated report, and yet no figures can show the result of the improved methods and more modern appliances which have rendered the hospital so much better than in previous years.

The addition of several endowed beds (now five in all, including one for a child under ten years) has enabled the physicians to admit a number of worthy cases for free treatment without the same drain upon the treasury as heretofore. In addition to the increased good accomplished, a wider experience for doctors and nurses has also resulted.

The cramped quarters of the Maternity hamper the work in that department very materially, many patients being refused merely from lack of accommodations, but for improvements in this direction we trust the future has much in store for us.

The real progress during the past year has been shown in increased efficiency. The hospital is undoubtedly small, the patients numbering no more than in many private hospitals, but in many ways this is an

advantage. The doctors not being overtaxed have more time to devote to trifles, to study the idiosyncrasies of the patients, and to investigate obscure affections.

We try to meet all conditions with the feeling that nothing is impossible where right motives prevail, and that thoroughness and efficiency will tell even where there are lack of funds and equipment.

REPORT OF THE MATERNITY OF THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

By ANNA E. BROOMALL, M.D.,
PROFESSOR OF OBSTETRICS.

From May 1, 1900, to May 1, 1901, three hundred and two cases were attended from this hospital.

Each student attended eight cases, and one student reports having had twenty-six. They delivered all normal cases, made perineal repairs where possible, and visited their cases afterward for two weeks.

During the year, 5017 visits were made by the doctors and students.

Operative cases when not too complicated were delivered by the internes, assisted by the Demonstrator of Obstetrics and the students.

There were no maternal deaths, and of the ten babies that were born dead, two were monstrosities incapable of independent existence, two were cases of funic prolapsus, one a neglected transverse that necessitated an immediate decapitation, one a craniotomy in a woman who did not send for assistance until many hours after the rupture of the membranes. Three were macerated.

Ten babies died while the cases were under hospital care—most of them from lack of care and from unhygienic surroundings.

One hundred and ninety-nine of the women were Russians, and most of them Jews. In one of these babies, after the Rabbinical circumcision, the entire penis sloughed and the child lived. The Rabbi assured the parents the organ would grow again.

The first decapitation in the history of the institution was in a deaf and dumb girl who would not acknowledge to her mother that she had pains, as she wanted to go to a wedding. When at last she yielded, the membranes had been ruptured for sixteen hours, the arm was prolapsed and the child dead. The puerperium was uneventful.

Since January, 1888, 2524 cases have been attended with but two deaths. Since the spring of 1896 no deaths have occurred under the care of the hospital.

REPORT OF THE WOMAN'S HOSPITAL MATERNITY.

By ANNA E. BROOMALL, M.D.,
PROFESSOR OF OBSTETRICS.

During the College year, from September 15, 1900, to May 15, 1901, while the Maternity of the Woman's Hospital has been under the supervision of the Chair of Obstetrics of the Woman's Medical College, one hundred and ten women were delivered, with no deaths. Although the service included the winter and spring months, when sepsis is usually most prevalent, and although the students assisted with the work, but one case of sepsis is reported. A young colored woman, who had had severe pain in her right side during the last month of pregnancy, was delivered normally, after but one examination, when the membranes ruptured. On the third day she developed fever, a swelling in the right broad ligament, and the stitches showed infection, but she left at the end of six weeks in good condition.

Students of the Senior class delivered multiparæ, assisted the interne with all primiparæ, and were present at all operative cases.

At the one Cæsarean section of this service the entire Senior class was present. The woman, a little, tuberculous hunchback, reported having weighed fifty-eight pounds early in her pregnancy, and had been in labor several hours when admitted. Respirations 36, pulse 126 per minute. In ninety-five seconds from the time of the first incision, the baby, a healthy girl of five and one-half pounds, was delivered, and in an hour the mother was put back to bed. Both left the hospital at the end of three weeks, because the husband felt that two weeks was long enough for any woman to stay in bed with a baby. Both had gained steadily; the abdominal wound was perfectly healed, and involution was normal; but we were not surprised to hear that the baby survived home care but three weeks.

The students assisted as usual in the laboratory work and daily attentions to mothers and babies, and in no case did the patients object.

THE HOSPITAL AND DISPENSARY OF THE ALUMNÆ OF THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

By GERTRUDE A. WALKER, M.D.,
SECRETARY OF THE BOARD OF MANAGERS.

The Hospital and Dispensary established six years ago by our Alumnæ still carries on a successful work, and is proving a practical help in many ways to the physicians connected with it as well as to the needy poor who attend its clinics.

During the past year the Board of Managers has received three new members, one of whom is a graduate of our College, Dr. May Sibley-Lee. An Auxiliary Board of young women is in process of formation.

Financially, the condition of the institution is prosperous. The Reserve Fund now amounts to $1115.21.

By arrangement with the Maternity Hospital on Washington Avenue an alternate term of service will be available to two of our graduates; and through the personal efforts of our President, Dr. Marshall, a third physician will live at the Dispensary throughout the coming year, taking alternate terms of in-door and out-door service.

The total number of new cases registered since the opening of the dispensary is 19,177. Care is taken to avoid registering any patient more than once; the number of new cases received this year is 3556, and no one of these is supposed to have ever applied before for treatment in any of the clinics.

The medical clinic has proved to be the largest one this year, having as total number of visits, 2618; the surgical follows very closely, with 2615; the throat, nose, and ear clinic registers 2143 visits; the gynecological records 1997; the children's 1510; the eye 1318; the dental 480; the skin 439. The out-practice visits number 1168. The total number of prescriptions was 7568, and money received therefor $1051.79.

No money is taken for treatment, and physicians are always at liberty to take to their offices any patients who are able to pay a fee.

These principles serve to dignify the work of the woman physician, and, therefore, entitle the Alumnæ Dispensary to the regard of all who deplore the present evil of hospital abuse and who desire to encourage young physicians to establish themselves in practice.

THE CHRISTIAN ASSOCIATION.

By CHARLOTTE FAIRBANKS,
CLASS OF 1902.

During the past year, the most important achievement for which the Christian Association is thankful is the cancelling of debt, whereby Brinton Hall comes into the full possession of the Association. The property is now without any incumbrance. At the beginning of the year the mortgage stood at $3000, besides about $90 interest. The Association has been much helped by its friends, but it is perhaps worthy of note that about $1100 came directly through the efforts of the students themselves. Since the building is now free from debt, the members are planning to put it in good repair. After this is done the Association hopes to be able to meet all ordinary expenses by means of its yearly income.

As usual, one room has been used by the Seniors on Maternity duty at the hospital, and the Association is much indebted to Dr. Broomall for refurnishing this room at the beginning of the College term. The membership list numbers about seventy students, or about 40 per cent. of the entire number of students. The attendance at the prayer-meetings on Wednesday evenings has been larger than last year, and has increased toward the latter part of the year. A number of guests have been entertained by the Association, among whom were Mrs. Geraldine Taylor, of the China Inland Mission, and Dr. Howard Kelly, of Johns Hopkins University. Dr. Kelly has promised to come again in the early Fall.

A special and successful effort has been made to emphasize the social side of the Association work by giving an "At Home" every Thursday afternoon. These informal teas were appreciated, and it was not an unusual thing for thirty students to come in during the afternoon. We hope that next year the Association may do even more toward extending religious and social life in the College.

THE PRESIDENT'S ADDRESS.

By ELIZABETH L. PECK, M.D.,
PHILADELPHIA.

At the Alumnæ meetings of 1900 many of us were present, enjoying the celebration of woman's half-century of work in medicine. These meetings, with their various reports and addresses, gave us a bird's-eye view of the progress made during the last fifty years. Freshly to our minds was recalled the brave struggles of the pioneers not only in our vicinity, in the founding of our College and hospitals, but far away from the length and breadth of our own country, and from distant lands, came the story of strenuous effort against opposition—pictures of brave, quiet lives spent in laying the foundation of respect and confidence, on which we of later days are privileged to build the superstructure of whatever success in our profession we may attain.

Some of these reports and addresses have given us a hint of what the future may have in store in the way of equipment for better work, in showing our need of money and devotion, and in pointing out the directions in which our energies are likely to be developed. It has seemed a possibly not uninteresting or unprofitable subject for us to consider what promise for the future and what guidance may be gained from a consideration of this history.

In looking over the reports from twenty-three States, one finds that fifteen of them show that the practice of their women is general, or general combined with gynecology as a specialty. In the reports where the ratio between general and special practice is given, the ratio varies between 5 per cent. and 30 per cent.—a ratio which one might judge to be a fair average of that prevailing in the profession at large. It is only in the centres of population that specialism has developed so largely. Practice in small towns or in the country is naturally general practice, consequently the majority of women as well as men in medicine are general practitioners.

As one of the writers, reporting for her section, says: "While as in the case of all women physicians obstetrics and gynecology hold first place, the work partakes largely of the character of that of the old-fashioned family physician, a field which, to the better trained woman, offers the broadest opportunities for professional distinction as well as usefulness to the community."

But the last score of years has seen a great change in the limits of the field of work occupied by the individual; the scope of medical

knowledge has become too vast for one mind to compass it or for the practical activities of one to reach over more than a fraction of its extent. This necessitates a change in methods of teaching that is gradually taking place in medical schools and hospitals. Specialization is the natural outgrowth of this advance, and doubtless elective studies will be more chosen as the student is given fuller liberty to follow his bent in education.

Specialization is a necessity and a forced step in medical practice; but its premature development may be a drawback to the performance of the highest type of work. I trust the time will never come when the specialist springs from college full-fledged upon the world. An apprenticeship in general practice, and a reasonably long one, is of incalculable value.

The more adequate training of the student in laboratory methods is a far step in the right direction. The special work of the laboratories appeals to many students as peculiarly satisfying in its clearness and accuracy.

It is gratifying to know, too, that many women graduates are making a specialty of pathological and bacteriological work. This work would seem peculiarly to suit those who might not care to endure the wear and tear incident to general practice, although, as one writer says, it is very difficult, owing to political reasons, for a woman to obtain a salaried position in such work.

But the needs of the general practitioner lie more directly in the line of clinical work, and to this class, as we have seen, belongs the large majority of women physicians, consequently of students. It is far from my thought to undervalue laboratory training for those about to enter general practice. Every student of medicine needs whatever can be gained in a medical course, not of necessity for future work in the office, though that is of value in the early years of practice, but that she may judge when it is needful to call to her aid the expert in laboratory methods as a help in diagnosis or treatment. Just here I would enter a plea that those whose work leaves them scant time for this investigation should educate their patients in regard to the value of such work and its fitting compensation, that the people may be taught to look upon it as of necessity and value to themselves, not merely as a satisfaction to their physicians.

Success in laboratory and experimental work demands of the student mental qualities of a high order, faculties trained to accurate observation, clear judgment in drawing conclusions, and absolute mental honesty, to see what is present as fact, not what might be desired or expected. The clinical observer who would be the successful practitioner requires those same qualities in large degree, but far more is demanded of him in certain directions. In this department is illustrated the statement often made, and sometimes scarcely believed by those whose training has been of the laboratory only, that medicine is an art as well as a science. A pure science it will never be so long as human nature is moulded by so many and varying, often indeterminate forces, social, inherited, circumstantial.

Opportunities for clinical work, the fullest possible, are needed by the embryo physician; much is gained in this work besides the scientific study of clinical facts, the training of eye, ear, and hand in practical work, the learning to teach right ways of living, and the rational application of therapeutical measures, however important these may be. He learns to handle his material mentally, to know humanity in various guises, under all conditions, to minister more and more wisely to the suffering body as the underlying temperament and the surrounding conditions are more completely understood. It is annoying to hear the phrase "healing art" spoken slightingly, as though it represented an old-fashioned idea, entirely out of date, leaving the inference that patients are to be cured mainly by an absolutely correct diagnosis, with a little very scientifically applied therapeutics.

Here is where a training too exclusively for the laboratory fails by leaving out the human element; we have all seen illustrations of this. The mind that conceives of a human being as a mechanism simply, and treats him as such, is sure to fail when confronted by the needs and problems of complex human nature.

Sir Felix Semon, in an interesting paper on "The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in Laryngology" (a special subject, to be sure, but treated as the general subject of medicine might well be considered in this relation), divides all practitioners in his branch of medicine into classes, ranging from those dependent wholly on clinical experience, who believe that no trustworthy conclusions can be drawn from experiments on animals, owing to the difference between human beings and animals, through varying shades of opinion, to those who stand in holy awe when the word experiment is mentioned. Himself he places in one of the middle classes—among those who, having done both experimental and clinical work, can judge of their relative value from experience. He goes on to say, "While we readily and gratefully acknowledge all these and similar advantages," speaking of the value of microscopical, bacteriological, and Roentgen ray investigations, "yet we do not conceal from ourselves that all these auxiliary methods, valuable though they may be, are subject to the same errors and fallacies of human observation as clinical laryngology itself. . . . In most cases independent, sound judgment on the part of the clinical observer is required when he avails himself of these apparently accurate methods. . . . . Endeavoring, then, to take a large view of the mutual relationship and relative value of clinical experience and any of the auxiliary methods so far named, I think it may be stated as a general principle, though admitting of exceptions, that clinical experience in laryngology, while gladly availing itself of and fully appreciating the usefulness of any of those methods, ought to keep the leadership to itself in all questions in which the ultimate responsibility rests with the clinical observer."

Continuing, the author takes up the matter of experimental research, and, showing its limitations and possible fallacies, concludes that experimental research, in order to prove a really valuable ally, requires

constant exercise of one's own judgment, and is all the better for criticism supplied by one's clinical experience.

There are many influences that tend to make woman the general practitioner: her interest in the family life, the care of children, the fact that most women who have thus far studied medicine have done so with a serious mind, desiring not only to gain a livelihood, but to work for the best good of the community, and seeing their fullest opportunity in this field. This motive actuates, as I believe, the majority of physicians, but seems to be earlier developed in the medical woman than in her brother practitioner.

The complaint has been made that woman since her entrance into medicine has done nothing, or very little, for the advancement of medical science. Among the few names in medicine to whom great deeds are credited no woman's name appears. But we cannot admit that she has added nothing to the sum total of medical progress. Her large share in the development of schools for training nurses is at least worthy of mention.

That she has done good work, faithful, conscientious, able, no one will deny. That she is in many ways particularly fitted for medical work, especially when her gifts of mind are developed and balanced by scientific training, is also acknowledged.

A well-known professor of medicine has recently stated his views in regard to the ability of woman, as shown in laboratory and other practical work, arguing that she possesses less originality of mind, less independence of thought than man. We may possibly admit that women are not as likely as men to do original work in medicine. It may not injure their prospects of success or lessen the amount of good they may accomplish if they do not. The vast majority of medical men do nothing startlingly original—fortunately for the world. If they keep abreast of the progress that is being made, and exercise the good judgment and the sane intuitions that are often the possession of the non-original mind, the world is probably quite as well off in the end.

It is amusing to watch the complacency with which women accept the tributes paid to their quick intuitions, their superior insight, their ready sympathies, and the prompt manner in which they repudiate any suggestion of mental superiority on the part of man. Personally, I am inclined to believe that there are points of inferiority in the mind feminine as well as points of superiority—on the whole a fair average equality. Perhaps Dr. Vaughan is right, and lack of originality may be one of these points of difference. It seems rather more probable that the greater difference rests in the much more slowly gained habit of self-reliance. The first attempt of a young man and a young woman doctor in doing plastic operative work occurs to me as an illustration of this. I have taught both, and confess to a greater feeling of safety while assisting the woman, though it may take more time. The woman waits to be told, is fearful of cutting too deep, and generally cautious in her work, while the man is apt to err in the other direction, and at first, at least, needs a restraining hand. To this lack of confidence

in her own powers may be due some of woman's failures in early practice.

Were I to review the history of woman's work in caring for sick poor, in civic reform, and in promoting the general health of the community, even the brief account given at our Jubilee meeting, the limits of this paper would be overpassed. As Dr. Blackwell said, in her story of the work of the New York Infirmary, "Certainly, it was never among the poor that women physicians were regarded as an objectionable novelty."

Another conclusion becomes plain from the reading of these records: that it is womenly women who have studied medicine since 1850 and who are practising medicine to-day. There are good reasons for this. Not only does the practice of medicine tend to call out womanly characteristics, but the demand for women physicians means woman as well as physician, not a poor imitation of man.

Thus far I have insisted on the special reasons why women should seize all opportunities, even the humblest, for clinical work, because the greatest good for the greatest number lies in this direction.

There are rarer natures who have implanted in their minds and hearts the love of truth for truth's sake, who, as in that picture George Eliot gives us of Lydgate absorbed in the works of Louis, "possess the imagination that reveals subtle actions inaccessible by any sort of lens, but tracked in that outer darkness through long pathways of necessary sequence, by the inward light which is the last refinement of energy, capable of breathing even the ethereal atoms in its ideally illumined space; who are enamored of that arduous invention which is the very eye of research, provisionally framing its object, and correcting it to more and more exact exactness of relation . . . who want to pierce the obscurity of those remote processes which prepare human misery and joy, those invisible thoroughfares which are the first lurking places of anguish, mania, and crime—that delicate poise and transition which determine the growth of happy or unhappy consciousness." To such we may only say God-speed, ready when they show us the fruits of their insight to make these results a wider blessing to the world at large.

We may believe, too, with steadfast confidence, that woman has her own special place in medicine, and that she will hold it for her own personal good, but more, even, for the welfare of the noble profession to which she belongs and for the sake of uplifting humanity.

ANÆMIAS OF CHILDREN.

By FRANCES R. SPRAGUE, M.D.,
SAN FRANCISCO.

In considering the anæmias of childhood it might be well to first recall the differences between the blood of adult life and that of childhood. A different standard must be set in the blood examinations both in health and diseases of children and adults. Holt, in a general statement, says that the blood of children is thinner, contains a larger proportion of water, is poorer in solids, and has a lower specific gravity than that of adults. Hoch and Schlesinger confirmed by Hammerschlag's method (a mixture of chloroform, one part, and benzole, two parts) the findings of other investigators, that, as a rule, the specific gravity in young children is lower than in adults, and remains low until the second year, when it rises gradually. "The specific gravity is independent of the number of white and red corpuscles, and is only influenced through the amount of hæmoglobin." A high specific gravity accompanies a high percentage of hæmoglobin. Hewes and others, therefore, hold that this is the most exact method of estimating the amount of hæmoglobin. The average specific gravity during childhood is 1052 to 1055.

The tables of Widowitz, Leichtenstern, and Hoch and Schlesinger present wide variations in the percentage of hæmoglobin at different ages. The observations of Widowitz seem to be more generally accepted, however, though in some particulars he approaches more nearly the conclusions of Hoch and Schlesinger. Only repeated examinations in each individual case will give a satisfactory result. Cabot holds that we should know not only the age, but the degree of development of a child, this last being a most important factor. "Such observations in blood examinations should always represent a comparison between the conditions before and during the sickness in question."

The leucocytes in infancy and childhood differ from adults, in that they are not only more numerous, but the variety of leucocytes differs. In children under ten years the basophiles are more, and neutrophiles are less, numerous, according to Hewes. The percentage of basophiles ranges from 50 to 80 per cent., while in adults it is 20 to 35 per cent.

The erythrocytes at birth are found in the greatest numbers, ranging from 4,350,000 to 6,500,000. During the first few days there are greater variations in size and shape, of both leucocytes and erythrocytes, than is found in adult blood. In infancy the number of erythro-

cytes ranges from 4,000,000 to 5,500,000, and in later childhood approaches the number found in adults.

The blood of children seems more susceptible to pathological change than that of adults, and these changes are much more pronounced than in older people. "Under pathological conditions the red cells revert more readily to the earlier type, and deformed or nucleated corpuscles are plentiful" (Cabot). Another important point to be remembered is the fact that an enlarged spleen is usually an accompaniment of the anæmias of infancy and childhood. According to Cabot, this enlargement, as well as the anæmia, is symptomatic of an underlying disorder.

This brings us to the classification of anæmias. Hewes asserts that anæmias are secondary. The classification of Monti and Berggrün in 1892 seems to be the most generally accepted one:

Anæmia	mild	with leucocytosis.
		without leucocytosis.
	grave	with leucocytosis.
		without leucocytosis.

Later, in 1894, the causes of anæmia were thus classified by Monti:

1. Congenital	syphilis, tuberculosis, hemorrhage, malaria, infectious diseases generally	in mother during pregnancy.
2. Acquired	(*a*) Hemorrhage	from navel, after circumcision, scurvy, purpura, melæna, hæmophilia, etc.
	(*b*) Other causes	inanition, bad hygiene, post-febrile, nephritis, diarrhœa, serous effusions, syphilis, rickets, suppuration, diseases of liver, spleen, bone, or lymph glands.

In children a basophile leucocytosis, except in leukæmia, is rarely accompanied by any pronounced increase in the whole number of leucocytes. In rhachitis, typhoid, and many forms of inanition a proportionate increase of the basophiles is found (Hewes). When the total number of leucocytes is increased the case assumes a graver outlook. The "mild" cases of Monti show no changes in the size or

shape of the red cells. The color index may or may not be low. The "grave" cases show an abnormal variation in the shape and size of the red cells, or what is known as poikilocytosis.

A careful study of the blood of tubercular children was made in the Children's Hospital in San Francisco by Dr. Philip King Brown. His conclusions are as follows: 1. The decrease in erythrocytes is found in the second and third stages of secondary anæmias in long-standing cases, in very young children, and in septic infections. 2. Hæmoglobin is decreased in all cases, and in proportion to the same factors which influence the erythrocytes. 3. The return to health is indicated by the tendency of blood to return to the normal. 4. Abscess formation is not necessarily accompanied by leucocytosis. The lowest percentage of hæmoglobin found in his cases was 15 per cent.; the erythrocytes were 2,800,000; leucocytes, 9650. This case was fatal.

The blood of syphilitic children may show an increase of leucocytes and a decrease of erythrocytes, the hæmoglobin being correspondingly diminished. Cabot refers to a case with 58,000 leucocytes and 1,000,000 erythrocytes. In rhachitis the hæmoglobin is usually low. A most marked case at present in the Children's Hospital shows 60 per cent. hæmoglobin; leucocytes, 10,900; erythrocytes, 4,048,000. Other cases are reported with much more reduced hæmoglobin, 35 per cent. being one given by Rotch. The increased leucocyte count is not characteristic of syphilis or rhachitis; but, as emphasized by Cabot, is to be regarded as a sign of arrest of development or a reversion to an earlier type of tissues.

The symptoms of anæmia, aside from the blood changes, are those so commonly seen by every practitioner—the pallor of skin and mucous membranes, the flaccid condition of the muscles, the exhaustion on slight exertion, and often constipation, capricious appetite, and faulty digestion. We sometimes find œdema, enfeebled circulation, and anæmic murmurs. We may have emaciation, or even its opposite. Marked nervous symptoms are frequently found, and general irritability and restlessness.

Forchheimer asserts that in a healthy child the hæmoglobin should not fall below 60 per cent., and he takes this as a standard.

The prognosis depends not only upon the severity of the anæmia but also upon the state of development and history of the child. The treatment hinges naturally upon the cause of the anæmia, but hygiene plays a most important part, whatever the cause may be. From a therapeutic stand-point, iron and arsenic are generally regarded as heading the list of drugs. That they are not entirely satisfactory is shown by the innumerable preparations with which the market is flooded. The effort is to increase the amount of hæmoglobin. Whether this is done by iron directly or not seems still to be a matter for discussion. Simon holds that iron simply stimulates the appetite; that proper food properly given is the *sine qua non.* Forchheimer asserts that he has been able to increase the quantity of hæmoglobin by the administration of intestinal antiseptics, as salol, hydronaphtol, creosote, and arsenic, and cites cases of other observers who report similar results.

He considers intestinal therapy absolutely necessary. The observations made at the Children's Hospital in San Francisco support this view. Henry lays stress upon the reaction of the different preparations of iron, holding that iron is not to be "prescribed regardless," but selected carefully and after the gastric and intestinal condition of the patient has been thoroughly studied. His opinion is that often iron fails because of a faulty selection.

A most important point in prescribing for children is to combine fitness with acceptability of preparation; as nearly a tasteless form as possible is advisable. This is found in the saccharated oxide of iron known as eisenzucker, duopeptonate of iron, dialyzed iron with some elixir; or with older children pills of Blaud's mass, with or without arsenic. My experience has been that without proper hygiene, pure food, fresh air and sun, medication assists but in a small way toward the desired end.

In reviewing the literature on the anæmias of children it is seen that the conclusions of investigators are at decided variance. For this reason I have purposely omitted some unsettled points, as the time and scope of this paper are too limited for their discussion. That the field is a wide one no one can deny, and but few can doubt that improved methods of research and a more exact system of examination will, in the next few years, clear many disputed points in diagnosis and nomenclature.

LITERATURE.

American Text-book of Diseases of Children.
Brown. Transactions of the Medical Society of the State of California, 1897.
Cabot. Clinical Examination of the Blood.
Forchheimer. Archives of Pediatrics, November, 1893.
Hewes. Boston Medical and Surgical Journal, July 6 and 13, 1899.
Henry. Anæmia, Medical and Surgical Reporter, April 24, 1897.
Hoch and Schlesinger. Beitrag zur Kinderheilkunde, 1892.
Holt. Diseases of Children.
Rotch. Pediatrics.
Simon. American Journal of the Medical Sciences, April, 1897.

MAR 14
LIBRARY

CLINICAL VARIETIES OF ANÆMIA.[1]

By MARY E. LAPHAM, M.D.,
HIGHLANDS, N. C.

[Prefatory Remarks: May it please the Court to remember that I am a recent graduate, and I take it that there are many recent graduates present; I speak to the recent graduates. I first thought that nothing could be easier than the study of a case of anæmia, because the physical signs were so suggestive. I did not realize that the treatment was dependent upon whether the disease existed as cause or effect. The differentiation between primary and secondary anæmia is easy—in the books. It did not occur to me that I could mistake the cause for the effect, and treat the symptom for the disease, to the utter exclusion of the underlying anæmia.]

The ill-effects of anæmia are manifested by symptoms indicating distress in any or all of the great systems of the body. Depression of the nerve-centres is shown by hysteria, neurasthenia, nervous dyspepsia, "spinal irritation," etc. The action of the heart may suggest myocardial degeneration; the relaxed condition of the peripheral vessels may result in alarming attacks of syncope. Stasis of the portal system may induce irritable bladder, polyuria, albuminuria, and casts, amenorrhœa or menorrhagia, an irritating cough, a relaxed and weak throat. Eyes, ears, nose, and skin may all bear witness to the evil resulting from the impoverished blood. We know that all of these universal and perhaps alarming symptoms may be due to one original cause, and we frequently see them yielding promptly simply to the administration of iron.

But is there another side, and may the reverse be true? Whereas systemic disturbances are often due to anæmia, it in its turn may as often be due to them. Do we have cases where the fault is primarily in some systemic incompetency, and the anæmia is but a symptom—a secondary anæmia, in fact, just as it is in tuberculosis or malaria? Is the determination of the relation between the systemic conditions and the anæmia of any therapeutic importance? Do we meet with cases in which the administration of iron does not accomplish the hoped-for result, and can this be because we must first correct the systemic fault which is causing all the trouble? Before we

[1] The original paper was destroyed by accident. This is a re-written abstract.

give iron is it necessary to make a thorough examination of the nervous, digestive, cardiac, and renal systems, and attempt to understand the relations of cause and effect between them and the anæmia? Iron is practically regarded as a specific and its prescription as a matter of routine, yet unsatisfactory results of treatment by it are not infrequent. The first difficulty we meet with is that of getting the drug absorbed. Is it enough to explain the influence of depraved systemic conditions by saying that they interfere with assimilation, or is the trouble more than that, and due to disease, of which the anæmia is a result, so that it could no more be remedied by iron than the anæmia of malaria or syphilis could? Can we thus distinguish clinical varieties of anæmia according to the system mostly at fault, and speak of them as gastro-intestinal, or neurotic, or cardiac anæmias, and at the same time indicate the treatment? In gastro-intestinal failure, should we first have to determine whether the fault was local or due to cardiac or neurotic influences? Would not a feebly-acting heart and consequent portal stasis suggest digitalis and nitroglycerin, while depressed nerve-centres acting irresponsibly might as plainly indicate the need of something to soothe their excessive irritability before the anorexia nervosa could be relieved? It is admitted that until the intestinal canal is clear and the digestive functions are in good order, no preparation of iron is of much or any avail. In the gastro-intestinal variety of anæmia this may require several weeks before iron can be given. It is certain that the action of iron is materially increased by the preliminary use of purgatives. As a St. Bartholomew physician said, "These patients need washing out, ironing, and then airing," just as if we should send them to a laundry. Can this be carried further, and attention to the needs of the other systems be regarded as equally important with that of the gastro-intestinal, and the use of a nerve sedative or tonic in neurotic anæmias, or of nitroglycerin or digitalis in cardiac anæmia, be comparable to that of mercury in syphilis or quinine in malaria? In the treatment of malaria many things have to be considered beside the administration of drugs. Diet, massage, and physiological therapeutics may not only be of equal importance, but even sufficient in themselves, and a severe case of anæmia may make a rapid recovery with scarcely a thought of drugs.

Miss M., aged thirty years, had been ill for two months when I was asked to see her. She gave a history of inherited gastro-intestinal weakness, of sick headaches, and lack of strength. All her life over-exertion or unusual strain of any kind had invariably resulted in nervous diarrhœa, sometimes causing ten or twenty movements in a day, obliging her to go to bed, and rendering digestion impossible. The last two months she had been wretchedly weak and miserable. Three weeks previously her right wrist-joint was dislocated on the smallest provocation; a few days later the left wrist yielded; her ankles were so weak and insecure that she was afraid to walk. As she said, "My joints seem to be falling to pieces."

Her physician prescribed rest in bed and arsenic, which was changed to sulphur after two weeks. This disagreeing with her badly, and her

physician having left town, I was called in. I found her greatly exhausted from sleeplessness and inability to eat. There was such distress after eating—in her head as well as stomach—that it was only with great reluctance that she took anything. Her eyes were painful, and there was considerable lacrimation, as she thought from neuralgia. The wrists were swollen and painful. Temperature, 98°; pulse, 68. Examination of blood showed less than 50 per cent. hæmoglobin, and 3,000,000 reds. The skin was colorless, the nails blanched, the whole body cold and clammy, of which fact she seemed unconscious. She was moved into a large, sunny room with four great windows constantly open, screens being used to keep off draughts. Access to that room could only be obtained by passing through the room of the nurse in charge. All visits, even of the family, were discouraged. All food for the patient was prepared by the nurse on a coal-oil stove in the adjoining hall.

As soon as she wakened in the morning an infusion of coffee in hot milk was taken. At 8 o'clock a hot sponge bath, followed by rubbing with cocoa butter, and a cup of broth, cream toast, peptonized milk, broth, or something easily digested and nourishing was given in small quantity every three hours. At 5 P.M. another rubbing, and at midnight a glass of milk, with $\frac{1}{50}$ gr. of hyoscine hydrobromate, to avoid morning insomnia. The greatest care was taken to keep the bed thoroughly warm, by plenty of hot-water bottles constantly changed.

The patient did exceedingly well, and after six weeks was up and dressed and taking exercise out-of-doors. After three months she was better than she had been for years, she said. To meet the wishes of her family she took a tablet, three times a day, in which they had the greatest confidence, containing $\frac{1}{10}$ gr. of iron and $\frac{1}{100}$ gr. of strychnine. The last month she took a cardiac tonic of digitalis and nitroglycerin.

Case of Mrs. E., aged thirty-eight years; no children. She was suffering from repeated attacks of syncope and total lack of appetite. She was very weak and greatly depressed. The action of the heart was feeble, especially the first sound. Temperature normal; pulse, 66. The first attack of syncope I saw lasted nearly three hours, the patient losing and regaining consciousness repeatedly, and for two days the action of the heart continued feebly uncertain and the surface temperature very low. Two weeks later petechiæ appeared on the feet, legs, and thighs; eyes and ankles became puffy, and there was pitting over the tibia. The blood-count showed 5,000,000 reds; the percentage of hæmoglobin was not taken. Cardiac tonics were given and every attempt made to restore nutrition. The diet was carefully managed. There were baths and massage; whiskey in small quantities, arsenic, and nux. The patient grew steadily weaker. When the petechiæ appeared, Blaud's pills were given, but iron was discontinued after a month on account of headache.

The attacks of syncope were frequent, and the nervous depression became very pronounced, together with increasing irritability. Finally, after two months of failure, $\frac{1}{8}$ gr. of codeine was given three times a day to quiet the excessive irritability, and at about the same time a

quart of "strippings," or the last of the milk drawn from the cow, was taken, a glassful at meals and one at bedtime. I am not certain which was the more beneficial, but the effect of the codeine was as prompt as it was remarkable—the clouds lifted, the patient became more hopeful, and her old sunny, elastic disposition began to show itself. At the same time she began to gain strength, and after three weeks iron was again given and persisted in for three months, Basham's mixture seeming to act best, together with a tonic laxative pill of ferr. carb., quin. sulph., nux, and aloin. The attacks of syncope did not cease for six months, and it was nearly a year before the relaxed condition of the peripheral vessels was overcome. There is still puffiness at the ankles and slight pitting over the tibia, but the patient is remarkably well and free from neurasthenic symptoms.

The blood-count and the high coloring in the face misled me, so that I did not appreciate the extent of the anæmia until the petechiæ appeared, while the cardiac conditions led me to fear myocardial degeneration. I did not then know that the anæmia of inanition might be characterized by a high blood-count.

DISCUSSION.

DR. MUSSON: Some forms of anæmia I believe to be due to nasal obstruction and lack of supply of oxygen to the lung. Cases have been examined of children showing a deficient number of red blood-granules, which, after operation upon the nasopharynx, showed an increase of red blood-corpuscles to 5,000,000 and an increase of hæmoglobin from 60 to 80 and even to 95 per cent. We frequently have cases of both children and adults coming to us with some form of nasal obstruction and suffering from some nervous manifestations, who are markedly improved in color and nutrition after operation. By nasal obstruction I do not only mean cases that are mouth-breathers; there are some cases of nasal obstruction in which the patient is not receiving the amount of oxygen necessary, but is unconscious of the fact.

DR. GERTRUDE A. WALKER: The ophthalmologist is tempted to grasp every opportunity to talk about the ophthalmoscope, believing that no instrument used in medical work is capable of offering more valuable suggestions for the treatment of disease. The microscope offers vast opportunities, but is not applicable to the study of tissues *in situ*. The ophthalmoscope enables the physician to observe living tissue without doing violence to the organism. The eye-ground shows an end artery and a beginning vein, and displays a sheet of nervous tissue, together with a collection of fibres that constitutes one of the most important nerves of the body. The magnified image obtainable with the ophthalmoscope allows the observer to note the rate of cardiac impulse, the color and volume of blood in arteries and veins, and the appearance of the optic nerve itself, with its expansion, the retina. Study of the eye-ground often gives the first suggestion of systemic disease; a well-known example of this is albuminuric retinitis, a condition frequently present as an evidence of nephritic trouble, even when no albumin is found in the urine. Pallor of the retina is seen in all cases of chlorosis, and in about two-thirds of such cases noted arterial pulsation is also observed, the latter symptom being attributable to sudden relaxation of the heart muscle due to low arterial tension. The vessels are also broad

and flat, through lack of tonicity of the walls, and are frequently tortuous. In pernicious anæmia the light yellow color of the fundus is very diagnostic, and the presence of retinal hemorrhages is significant of this type of anæmia. Tendency to hemorrhages is much more marked, however, in leukæmia, while the enormous distention of the vessels is a startling appearance which is proof in itself of serious circulatory disease.

Without attempting to cover the uses of the ophthalmoscope in the large field offered by the anæmias, enough has been said, perhaps, to afford reason for making a plea for the wider use of the ophthalmoscope as an aid to diagnosis of general disorders. In our own College we are making strenuous efforts to impress the value of this instrument upon the students, and to make them sufficiently expert in its use to enable them to rely upon it in their practice.

DR. GETTY: Since 1871 a sufficient number of examinations have been made in ophthalmology to show that simple anæmia alone gives a distinct picture of its own. We have several cases reported of such examinations in which the picture is distinct. We have retinal hemorrhages distinctly characteristic of anæmia. In the anæmia following kidney and heart trouble we have hemorrhages, but they are not the same. Autopsies have been made which prove that these hemorrhages observed in cases of anæmia are due to anæmia alone.

LABORATORY DIAGNOSIS OF THE ANÆMIAS.

By MARY B. GARVIN, M.D.,
PHILADELPHIA.

A FEW years ago the laboratory diagnosis of anæmia was unknown. To-day a striking contrast is presented in the many well-equipped hospital laboratories, where the examination of the blood of suspicious cases is a matter of routine practice. These examinations have recently become of greater value through improved technique.

The method includes:

1. The microscopical examination of fresh and dry blood preparations.
2. The counting of blood-corpuscles.
3. The estimation of the percentage of hæmoglobin.

Preparations of blood for staining are obtained by puncturing any finger, generally the middle one of the left hand, and transferring the blood to cover-glasses and slides—slides being used for moist preparations, cover-glasses for dry. A thin layer is obtained by practice. The dry-blood preparations are stained with Ehrlich's triple stain, or with eosin, followed by methylene blue. If the staining is successful, the various leucocytes can be easily identified, and the increase or decrease in number of any special form noted.

Of equal value with the stain is the next process—the counting of the corpuscles. For this work we use the Thoma-Zeiss hæmocytometer. The point of the pipette of the hæmocytometer is placed upon the drop of blood on the patient's finger. By suction the blood is drawn up to the point marked 1 on the pipette. As soon as it has reached this point, the pipette is quickly placed in the diluting solution, and this is drawn up to point 101. This must be done carefully but quickly, as the blood may coagulate before the fluid is drawn up. The blood is now diluted 100 times, and is ready for counting. On the hæmocytometer is a slide containing a cell divided by parallel lines to form small squares (400 in all). At least 40 of these are counted, and always the same sides of the square to avoid error of overcount. The length of each side is 1/20 mm. The next step is the calculation. Each square has the capacity of 1/4000 c.mm. The total number of corpuscles is estimated by multiplying the number of corpuscles counted by the 100 of dilution and by 4000, and dividing the result by the number of squares counted.

Daland's hæmatocrite and Oliver's tintometer are used by many

investigators instead of the Thoma-Zeiss counter, but are not so satisfactory.

Since the blood in certain anæmias shows the normal number of corpuscles but a reduction in hæmoglobin, a test of this must be made. It is a color test, dependent upon the comparison of the blood with the various tints in the scale of the instrument. Fleischl's hæmometer is generally used.

Besides the actual count of the corpuscles, a differential count of the leucocytes is necessary to determine the ratio of lymphocytes, polymorphonuclear neutrophiles, eosinophiles, and other forms present.

So much for the methods of blood examination. What of their practical value? They are often confirmatory of diagnosis, and without them certain forms of anæmia at times cannot be differentiated. Compare, for example, pernicious anæmia and chlorosis. Symptomatically, they are closely allied. In chlorosis, however, the blood examinations show often the normal number of corpuscles, with a marked reduction of the hæmoglobin. In pernicious anæmia, on the contrary, the red corpuscles are often as low as 1,000,000 or less, and show marked changes in size and shape.

Doubt exists as to whether a case is Hodgkin's disease or leukæmia. The diagnosis may be made in the laboratory. The high count of the leucocytes, with the detection of numerous nucleated red cells, is conclusive of leukæmia, for in Hodgkin's disease the results of examination are negative.

Determining the variety of leukæmia depends often on the results of blood examination. The excess of lymphocytes in the lymphatic form separates it from the splenic myelogenous variety in which the myelocytes or large uninucleated cells form 30 to 50 per cent. of all the leucocytes present.

By this hasty review I have endeavored to explain the ordinary methods of blood examination.

Their technical nature renders them of little interest to many, but their practical value as an aid to diagnosis will be apparent to all.

DISCUSSION.

DR. BUTLER: In securing a drop of blood I find in nervous patients it is better to take it from the lobe of the ear. Cabot advises that method. It is not so convenient to obtain the specimen from this site, but it is less painful to the patient. Ehrlich uses the middle finger. With an instrument devised by Daland, a spear-shaped needle, there is little pain, and a good-sized drop of blood is obtained, and one knows with this instrument how deeply one is puncturing.

It is always necessary to have a book upon blood examinations at hand. The technique is not easily remembered unless a specialty is made of such examinations. The hæmometer is inexpensive and convenient. Fleischl's instrument is a good one, but there is always need of hunting up a dark closet, and a great deal of work is required to complete the examination. I have been especially interested in getting hæmoglobin

tests in cases of syphilis. In these cases the hæmoglobin has been as low as 40 and even 25 per cent.

DR. CADWALLADER: It seems almost impossible to over-estimate the importance of the rôle of the laboratory in the diagnosis of anæmia. Signs and symptoms may be deceptive, and yet diagnosis be positively made. Thus, Cabot quotes two cases in adjacent beds at the Massachusetts General Hospital, "both with extreme yellow pallor, without emaciation; one had 1,020,000, and the other 4,100,000 red cells. Hæmoglobin, 30 per cent. in each. The first was pernicious anæmia; the second, nephritis."

I cannot better illustrate the modern laboratory methods of diagnosis than by briefly presenting to you the record of two or three cases from the clinical laboratory of the Woman's Hospital during the past year, leaving aside entirely all bedside notes, clinical observations, and any other aids to diagnosis.

CASE I.—Woman, aged forty years. Single; American; occupation, stenographer; admitted December 15, 1900. Diagnosis, pernicious anæmia. To show how this diagnosis was reached, I repeat the more important characteristics of the blood in this disease.

The first laboratory notes, on December 19, were as follows:

Miss M.	Pernicious Anæmia.
1. Reds, 733,593.	1. Reds markedly diminished.
2. Red cells degenerated, and various in shape.	2. Poikilocytosis.
3. Various also in size, average increased.	3. Average diameter, reds increased.
4. White cells, 858.	4. Whites normal, or below.
5. Small mononuclears, 52.2 per cent.	5. Lymphocytosis.
6. Six nucleated reds seen.	6. Presence of nucleated reds, with tendency to preponderance of megaloblasts.
7. Hæmoglobin, 21 per cent. Percentage of reds, 14.	7. Color index high.

One especially interesting point here is the percentage of small mononuclears, 52.2, which is higher than is often seen, the average of 32 cases at Johns Hopkins University being 45.9 per cent.

Careful study of this blood is recorded once a week after this. On February 20th, the notes are these: reds, 2,371,800; whites, 1386; hæmoglobin, 50 per cent.; small mononuclears, 36.5 per cent.; four nucleated reds seen and one megaloblast.

Though improvement is seen in the great increase of reds and in the decided decrease in the number of lymphocytes, we still note the characteristics of the disease: Color index remains above 1; the whites still diminished; percentage of lymphocytes above normal; the nucleated reds present and going from bad to worse, as denoted by the appearance of the megaloblast.

For many weeks the counts varied but little from that just described, except that more megaloblasts were seen. But at last, on April 27th, the count reads thus: Reds, 4,068,750; whites, 4570; hæmoglobin, 66 per cent. That is, the reds are improved; the whites normal; the color index 33/40, or a little below 1. But here comes in the value of the differential count.

It is noted: 5 nucleated reds seen; small mononuclears, 44.6 per cent. It is observed that with a small number of leucocytes, the larger the num-

ber of lymphocytes, the worse the prognosis. In other words, pernicious anæmia once present always present.

The patient left the hospital soon after the above count was made, apparently fat and well, considered by herself and her friends cured, but the laboratory is able to furnish prognosis along with diagnosis, and the hæmoglobinometer, the Thoma-Zeiss counting apparatus, the Toisson fluid, and all the other necessaries are even now in readiness when the relapse comes, as come it must.

CASE II.—Girl, aged seventeen years. English by birth; admitted April 10, 1901. Diagnosis, chlorosis, with valvular cardiac disease.

Chlorosis.	L. B.
1. Reds nearly normal. Average, 63 cases, 4,096,000 (but lowest at Massachusetts General Hospital, 1,932,000).	Reds, 2,166,000.
2. Size diminished.	
3. Color very pale.	Anæmic degeneration of reds.
4. General absence of nucleated reds.	No nucleated reds seen.
5. Hæmoglobin, average, 42 per cent. Color index low.	Hæmoglobin, 23 per cent. Color index = ½.
6. Lymphocytosis. No leucocytosis.	Whites, 4530. Lymphocytes, 45 per cent. Polymorphonuclear nucleated, 9.4 per cent.

After one week of treatment the blood changed to reds, 4,825,000; whites, 3270; hæmoglobin, 38 per cent. Her hæmoglobin averaged 55 per cent. when discharged each time from the hospital. This patient has so-called habitual chlorosis, having had six recurrent attacks in one and a half years. There is great similarity in the laboratory notes each time, and they bear out Cabot's statement that the color index is not progressively higher with succeeding attacks.

CASE III.—Anæmia, secondary to rhachitis. Girl, colored, aged seven years. Admitted January 10, 1900.

Characteristics of Secondary Anæmia.	E. R., January 11.
1. Reds reduced.	1. Reds, 1,218,000.
2. Color pale.	2. Color pale. Hæmoglobin, 25 per cent.
3. Leucocytes increased.	3. Whites, 78,538. Small number of nucleated reds. No myelocytes.
4. Nucleated reds.	

While we have here most of the characteristics, the fact that the whites numbered 78,000 led to the suspicion that further changes must be going on. I have not been able to find a case of secondary anæmia recorded in which the whites were above 12,000, that highest number being after hemorrhage of abortion.

Now, to complete this diagnosis the differential count is necessary. The point which distinguishes Hodgkin's disease from severe secondary anæmias is the enormous increase in the number of polymorphonuclear cells. The count in this case shows: Small lymphocytes, 28 per cent.; large lymphocytes, 3.7 per cent.; polymorphonuclear, 66 per cent.

1. Low number of reds. 2. Increased whites. 3. Polymorphonuclear increased; diagnosis, pseudoleukæmia.

The seventh blood count in this case shows: Reds, 1,337,500; whites, 31,250; hæmoglobin, 27 per cent.; polymorphonuclear, 68 per cent.; small mononuclear, 21 per cent.; nucleated reds, 1.1 to each polymorphonuclear; many megaloblasts; much degeneration in shape, size, and color; also great variety between small and large mononuclears.

Three cases are on record where transition from Hodgkin's disease to true leukæmia has occurred.

The child left the hospital on April 6, 1900, but it is hoped that further study of the blood may be made, with a view to determining the possible transition to true leukæmia.

A CASE OF SECONDARY ANÆMIA OF THE PERNICIOUS TYPE ASSOCIATED WITH MARKED JAUNDICE; RAPID RECOVERY.

By ELEANOR C. JONES, M.D.,
PHILADELPHIA.

Miss L. M., aged twenty-five years, a native of Germany, was admitted to the Woman's Hospital of Philadelphia on January 10, 1901. Her family history was good. Her father, mother, three brothers, and one sister are all living and well. Her personal history was also a good one; she had not suffered any of the usual diseases of childhood. The only illness of her childhood was an attack of pneumonia when she was ten years of age. She had been well and strong up to the time of her present illness, and on her admission to the hospital presented the appearance of a person of unusual vigor. On admission she gave the following history of her present illness: She began to feel ill about four or five weeks ago; she felt weak and tired, so that she was scarcely able to work; but she continued at her occupation, that of a domestic, until one week ago, when she was compelled to go to bed, because of the aggravation of all her symptoms. She now had severe pain in her back and limbs, and also in the region of the greater curvature of the stomach; she also had headache, and her tongue became much coated, and her bowels showed the general alimentary disturbance and became irregular, alternately constipated and loose. Jaundice developed about one week before admission to the hospital. She had a slight chill on January 6th and also on January 7th.

Here we have the history of a case of catarrhal jaundice, following on gastro-duodenal catarrh. The first evidence that the catarrh had involved the bile ducts was in the jaundiced hue of the skin and visible mucous membranes. A thorough examination of the patient was made on her admission, on January 10th, and the following notes were made: Skin shows a jaundiced hue and is dark yellow; mucous membranes and conjunctivæ also yellow; she complains of pains in the left inguinal region, and some resistance is felt on deep pressure at this point. There is an absence of tenderness in the hepatic region and also over the gall-bladder. The area of liver dulness is slightly diminished; the lower edge of the liver extends to one-half inch above border of ribs; no enlargement of the spleen is present; abdomen distended and tympanitic; the pulse is slow and small, and of high tension—about 75 per minute; temperature, 99.2°; respirations, 20 per minute; stools sometimes yellow and sometimes clay-colored, and always partly

formed. Urinalysis shows color to be reddish-brown and cloudy; specific gravity, 1016; no albumin or sugar present; urea, 1.6 per cent.; microscopically, epithelial cells, also bile pigment and a few white and red blood cells.

At this time the case seemed to be one of ordinary catarrhal jaundice, and treatment for that condition was accordingly instituted.

From January 13th to January 27th the stools remained clay-colored, and the temperature remained below 100°. From January 27th the temperature began to rise, and from January 27th to February 13th the temperature showed a range from 100° to 103.4°, and after January 27th the patient's condition became rapidly and decidedly worse. On January 29th the icteric hue of the skin became deeper, and the urine was nearly black in color, and also contained albumin, but no casts. The stools, however, occasionally showed some yellow or green tinge, showing bile was passing the common duct; but, as the jaundice continued deepening and the temperature rising, the catarrh was probably extending to the intrahepatic ducts. She also developed an attack of urticaria, which lasted several days, and she began to have frequent epistaxis. On January 31st a careful physical examination showed the area of liver dulness to be normal, and that there was no tenderness in this region, but that the spleen was somewhat enlarged. On that day she vomited a quantity of bile-stained fluid, which would show that the common duct, which empties into the duodenum, was not entirely closed, and so the bile could regurgitate into the stomach.

The patient now seemed very ill, and the most extreme depression and relaxation were present. On February 1st, Dr. Adelaide W. Peckham, Director of the Clinical Laboratory of the Woman's Hospital, made an examination of her blood, and all of the subsequent examinations of the blood were made by Dr. Peckham. The blood showed: Red corpuscles, 2,068,750; hæmoglobin, 32 per cent.; leucocytes, 3914. The differential count of the white cells showed: Small lymphocytes, 13 per cent.; large lymphocytes, 13 per cent.; polymorphonuclear, 72 per cent.; eosinophiles, 1.3 per cent. The blood, however, at this time only showed a considerable degree of anæmia, but no pernicious features. The red cells showed degeneration by varying in size and shape, and also by taking up the nuclear stain. They were lessened considerably in number. The white cells retained their normal proportions to each other, but were lessened as a whole. Large quantities of bile pigment were seen in the blood preparations.

On February 2d a green tinge was apparent in the skin, and this bronzing of the skin continued and deepened for over a week. Osler says that the greenish-bronze color, such as existed in this case, is never seen in simple catarrhal jaundice, and such tints generally indicate an unfavorable prognosis.

On February 2d the patient was given ten grains of calomel, and this was followed on February 3d by magnesia sulphate, one-half ounce.

The blood count was again made on February 3d, two days after the first count, but it now showed the most surprising changes, as follows: Red

cells, 1,087,500; leucocytes, 13,266; hæmoglobin, 22 per cent. Here was a loss of over 1,000,000 red cells per cubic millimetre in two days, and a rise of the white cells from 3914 to 13,266, showing a considerable degree of leucocytosis. I do not think this very rapid diminution in the number of red cells could in any way be associated with the one large dose of calomel, for already, before the administration of the calomel, the spleen was enlarged, the color of the skin a very deep jaundiced hue, and the temperature high. I think it is likely that the red cells suffered rapid destruction, consequent on the absorption of the bile acids into the blood, for physiology has shown that these acids possess the power of destroying blood-corpuscles.

The stools on February 3d, following the first dose of calomel, were bright yellow (a burnt-sienna color) and green, also the urine became lighter in color, but now contained blood-stained casts. The jaundiced hue of the skin became temporarily slightly less marked.

Dr. Peckham at this time made a careful examination of the feces in search of possible amœbæ, but with negative result. An examination of the urine at this time gave the indican reaction.

On February 5th, after having had ten grains of calomel on three successive nights, followed by salines, and daily high rectal enemata of cold saline water, she showed symptoms of salivation, and her general condition also was very bad. She seemed threatened with heart failure, despite vigorous stimulation with strychnine, digitalis, and oxygen by inhalation. The blood examination now showed still further degenerative changes; a stained specimen showed very marked leucocytosis; the neutrophiles varied much in size; the nucleated red cells were quite abundant. The red cells were extremely degenerated and diminished in number (930,859), showing marked poikilocytosis; also many megaloblasts were seen, and one myelocyte, and the bile pigments were still in the blood.

Here are all the changes of the red cells that are seen in pernicious anæmia: the marked diminution in number (under one million), the altered size and shape, also the nucleated red cells and many megaloblasts. Ehrlich has shown that megaloblastic blood is one of the significant features of the blood in pernicious anæmia. There is also recorded by Dr. Peckham the occurrence of a few myelocytes in this blood. The occurrence of the myelocytes of Ehrlich in the circulating blood is always to be looked upon as pathological, for it is the intrusion of white cells normally found only in bone-marrow, and Cabot ascribes their presence to an acceleration of the function of the marrow. They indicate a very grave anæmia, though not necessarily a primary pernicious anæmia.

On February 6th the symptoms of salivation were marked, although it may be that the stomatitis and hemorrhagic gingivitis which developed were partly due to the blood condition, for it has been recorded that such conditions of the mouth are common in pernicious anæmia. The symptoms present were as follows: Ulcers on the buccal surface, lips, and gums; the tongue was swollen and covered with a heavy fur, and the breath was extremely fetid; the saliva ran constantly from

the mouth, and the teeth and mouth were so tender that it was impossible for her to eat any solid food; also the submaxillary, sublingual, and parotid glands were swollen and tender.

On this date the splenic area was found considerably increased, extending to the nipple line anteriorly, and to the costal margin inferiorly. The liver was also enlarged, extending one inch below the costal margin in the nipple line. The examination of the heart showed a loud systolic murmur at the base, and that the left ventricle was slightly dilated. Her vision was not at any time affected. The urine showed the diazo reaction for the first time, and continued giving this brilliant reaction for several weeks, showing that the proteid bodies that are present in typhoid fever and a number of other acute infectious diseases were also present in this case.

Her mental condition was that of a low typhoid state; muttering delirium or sometimes coma vigil existed.

The blood showed its maximum changes on February 8th, when the count was reduced to 772,333 red corpuscles, and the white corpuscles increased to 71,400, and the hæmoglobin was relatively low—only recorded as 20 per cent. The skin also on this date showed its most marked greenish tint.

From this time the patient began to improve, and in two days gained over 1,000,000 red corpuscles per cubic millimeter and 10 per cent. hæmoglobin, and the white cells were reduced to 16,066. The blood changes continued to undergo rapid improvement, and her other symptoms continued to abate rapidly. On February 26th it was noted that only a slight icteroid hue of conjunctivæ, hands, and abdomen remained. On March 13th she was discharged, a well woman, and with a blood condition that was only slightly below the normal.

In looking over the literature of secondary pernicious anæmia I can find the record of but one case associated with jaundice. This case is one reported by Dr. Byrom Bromwell in the *Lancet*, London, 1897. This case as reported seems similar to my case in its clinical history, blood changes, and favorable result.

The following table will show the blood changes in detail:

	Feb. 1.	Feb. 3.	Feb. 6.	Feb. 8.	Feb. 12.
Red cells . . .	2,068,750	1,087,500	930,859 marked poikilocytosis	772,333	1,930,859
Hæmoglobin . .	32 per ct.	22 per ct.	25 per ct.	20 per ct.	30 per ct.
Nucleated reds . .	.....	.....	1 to 34 whites.	.....	1 to 26 whites.
Megaloblasts . .	.....	.....	1 to 3 normoblasts.	.....	1 to 2 normoblasts.
Leucocytes . . .	3,914	13,266	21,300	71,400	16,066
Differential count:					
Small lymphocytes	13 per ct.	.....	7.1 per ct.		
Large lymphocytes	13 "	.....	4.3 "		
Polymorphonuclear	72 "	.....	8.2 "	.....	87.5 per ct.
Eosinophiles . .	1.3 "	.....	4 "		
Transitional . .	.....	.....	3 "	.....	4.34 "
Small mononuclear	.....	.....	.....	.....	3.42 "
Large mononuclear	.....	.....	.....	.....	3.4 "
Myelocytes . .	.....	.....	2 per ct.	.....	8 "

	Feb. 14.	Feb. 18.	Feb. 21.	Feb. 28.	March 13.
Red cells . . .	1,743,750	2,195,355	2,542,386	3,014,843 (improved appearance)	3,031,250
Hæmoglobin . .	35 per ct.	50 per ct.	60 per ct.	60 per ct.	65 per ct.
White cells . . .	.....	.....	.....	8,650	8,100
Nucleated reds . .	1 to 46 whites.				
Megaloblasts . .	1 to 7 normoblasts.				
Leucocytes . . .	23,739	12,400	899		
Neutrophiles . .	.....	.....	.....	75.9	
Polymorphonuclear .	83.6 per ct.				
Transitional . .	6.2 "	.....	.....	2.0 per ct.	
Small mononuclear .	4.8 "	.....	.....	17.3 "	
Large mononuclear .	4.8 "	.....	.....	4.2 "	
Myelocytes . . .	3 seen.				
Eosinophiles . .	.....	.....	.....	0.6 "	

These changes indicate a most severe or pernicious type of anæmia. The primary condition was catarrhal jaundice, and the anæmia developed as a secondary condition. Cabot has drawn attention to the main features marking a case of primary pernicious anæmia from a secondary one, as follows:

	Primary pernicious anæmia.	Severe secondary anæmia.
Red cells	About 1,000,000.	May be 1,000,000 or less.
White cells . . .	Usually decreased.	Usually increased.
Hæmoglobin . . .	Often relatively high.	Relatively low.
Megaloblasts . . .	Constitute the majority of the nucleated red cells.	Rare; never more numerous than normoblasts.
Normoblasts . . .	Less numerous than megaloblasts.	Common.
Size of red cells . .	Increased.	Various; not increased.
Lymphocytes . . .	Increased.	Usually diminished.
Polymorphonuclear cells	Decreased.	Usually increased.
Myelocytes . . .	Common.	Rare.

This case is interesting because of the remarkable rapidity with which the very alarming symptoms and grave anæmic changes in the blood developed, and because of the equal rapidity with which restoration was accomplished. She was admitted to the hospital January 10th, and was discharged after an illness of only two months, the blood in that short time having undergone deterioration to a point that gravely threatened existence and having afterward become so nearly perfect that on her discharge from the hospital on March 13th all the functions of life were properly and easily performed.

This case is also interesting and unusual because of the grave and pernicious type of anæmia and other severe constitutional symptoms following in a case beginning as a simple one of catarrhal jaundice.

DISCUSSION.

DR. ADELAIDE WARD PECKHAM: The case reported by Dr. Jones seems to me to present several very interesting points for discussion. As the clinical diagnostician I was very much interested in it, and I hope that some one will be able to cite similar cases or discuss some of the features of this one. An important query is: What factor caused enlargement of the spleen at a certain period of the disease? At this time the disease began to change from an ordinary simple jaundice to a pernicious form. An enlarged spleen is occasionally found in catarrhal jaundice, but it is rather rare, and such cases are not attended by the serious symptoms which accompanied that condition in this patient.

Let me review for a moment the factors causing enlargement of the spleen, for the purpose of comparing them with the conditions found in this patient.

The most frequent cause is the invasion of the body by the specific bacteria of some disease, such as typhoid and yellow fevers, malaria, the gastro-intestinal form of influenza, Weil's disease, and many others. In each of these diseases there is enlargement of the spleen, and this condition may be accompanied by jaundice due to catarrh of the bile ducts—from extension of the bacteria to the liver and gall-bladder.

In these germ diseases there are two causes for enlargement of the spleen. The first is brought about by the action of the phagocytes. They take up the bacteria and carry them to the spleen, where, by a special process, these cells are strained out of the blood and retained in the spleen. A round-cell infiltration takes place for the purpose of destroying the germs, and these cells enlarge the spleen.

Again, this may be brought about by a toxæmia. Toxins from a local infection may enter the blood and destroy its cells as well as those of other tissues with which it comes in contact; the débris of the cells and the toxins are carried to the spleen and there cause a round-cell infiltration as before.

Now, could a bacillary invasion have been the cause of enlargement in the case under discussion? The almost entire absence of bile in the intestine for a considerable period greatly favors an increase of the intestinal bacilli and their extension into the liver. In such case a condition might be brought about which would resemble Weil's disease, which is a very severe acute jaundice, perhaps an infectious cholecystitis of the gall-bladder, which is said to be caused by the proteus, a bacillus found in the intestine. This condition did actually occur, but we have reasons for believing that the symptoms were not due in this case to any special bacterium, and that the disease was not a bacterial toxæmia.

There is, however, another form of toxæmia, due to poisons as potent as the bacillary, which, it seems to me, was the causal agent in changing this case to a pernicious form. In all cases where the blood is being rapidly destroyed a large amount of proteids is set free in the blood and carried to all portions of the body. One of the most abundant of these proteids is nucleo-albumin derived from the cells.

In this case the primary poison or toxins was the bile which was deposited in the tissue cells, and large masses of bile pigment were seen in all the blood preparations. The cell débris and bile pigment were carried to the spleen, causing its enlargement and giving the other symptoms of toxæmia. In addition to this there may have been an absorption of improperly digested albumins taken in as food, for in such a severe disturbance as that caused

by the suppression of bile from the intestines for a long period the pancreas would fail in producing the tryptic enzyme necessary for carrying on proteolysis, and so whatever proteids were taken in as food might not be reduced to peptones. This theory of autotoxæmia is strengthened by the findings in the case. An examination of the urine from day to day showed an abundance of albumin; a qualitative analysis showed serum albumin and serum globulin to be present, and nucleo-albumin in great abundance. The diazo reaction gave a very deep color reaction at this time, and an albumin was present which was not coagulable by heat and was not precipitated by the reagents used for precipitating the well-known albumins. This was probably derived from the white cells by a resorption of their peptones into the blood stream. The condition of the blood was like that of the blood diseases, leukæmia, pernicious anæmia, etc. The albuminuria of these diseases is said to be of hæmic origin. At one time cholesterin was supposed to be the cause of the severe nervous symptoms in jaundice, but other proteid bodies and probably a uræmia may be an important factor.

According to this theory a brief statement of the case would be as follows: After a period of several weeks of jaundice, during which time the bile in the blood was destroying a considerable number of the blood cells, and the proteids of the food were being absorbed without proper peptonization, a condition of autotoxæmia was induced which resembled that of a bacillary toxæmia, and was very similar to that of such blood diseases as leukæmia and pernicious anæmia.

The second point of interest is the color of the patient. At first there was the lemon hue of the ordinary catarrhal jaundice, due to the presence of bile pigment in the epidermal cells. Later the color changed to a bronzed hue. Wherever there is an extensive liberation of hæmoglobin a yellow pigment is formed. This pigment in certain amounts is converted into bile products; but when it is in excess in the body it is taken up by the protoplasm of the tissue cells and precipitated to await a more convenient time for conversion into bile products. This is the pigment ochre of Kelsch and Kiener. In the case under consideration the bronzed hue was due to the combination of the bile and blood pigments. This color is seen only in those cases where there is an extensive destruction of the blood cells.

The third feature of interest is the leucocytosis. The cause of the greatly increased number of white cells is probably the same as in malaria. In this disease the action of the phagocytes is to take up the pigment and carry it to the spleen. The pigment is found in the bloodvessels of all organs, but it is found in the cells of the spleen tissue and bone-marrow. The bile pigment was probably taken up in the same manner in the case of jaundice, and the great amount of bile and blood pigment warranted the extensive leucocytosis found in this case.

Dr. Bitting-Kennedy: I would like to ask Dr. Jones how she treated the patient after administering the large dose of calomel.

Dr. Jones closes: When the case was first seen at the hospital it was supposed to be one of simple catarrhal jaundice, and treatment incident to that condition was begun. I took charge of the case February 1st. At that time the color seemed to be deepening, and there appeared to be great obstruction in the bile ducts. I gave her the large dose of calomel in the hope of removing the obstruction in the gall ducts. It seemed to accomplish this in a measure, but also brought about the salivation. This required treatment as well as the primary condition. The patient was kept upon a milk diet as strictly as possible, and in addition, as a routine treatment, bowel injections of cold saline solutions were given daily, hoping to produce, by reflex movements of the bowels, increased peristalsis. These

seemed to do good; often after the injections some yellow feces were passed. The depression was such that active stimulation was necessary, and inhalations of oxygen every five minutes, day and night, were administered for over forty-eight hours. The salivation was treated by small doses of potassium iodide, the ulcers in the mouth were cauterized, and antiseptic mouth washes employed. I lay great stress upon the high bowel injections, which apparently did this patient a great deal of good; as much as two quarts was used at a time. The patient was placed as nearly as possible in the knee-chest position during their administration.

Dr. Jones presented some microscopical slides, showing the blood appearance of the above case during the different stages of the attack.

TWO CASES OF PULMONARY INFLUENZA.

By A. HELENA GOODWIN, M.D.,
PHILADELPHIA.

To us all, as practitioners of medicine, comes some experience in cases of influenza; though we are all, perhaps, of the mind that since the epidemic of 1889 this disease has been made responsible for more protean manifestations than even *it* is capable of. Before this time malaria was held accountable for all obscure ailments; and it satisfied the patient and the patient's friends, if not entirely the physician.

When one comes to look closely into the subject of influenza one sees how widespread are the effects of Pfeiffer's bacillus.

Attacks of influenza have been known for ages. In 1387, says Sir Thomas Grainger Stewart, we have record of a well-marked attack in Europe. Buoninsegni, in his *Florentine History*, calls it "una influenza;" and in the Strassburg district Jacob von Königshofer details some of the symptoms which mark our modern attacks—as cough and running at the nose—and says that it attacked nine out of every ten people.

In 1562 an epidemic visited Scotland, and a letter from Thomas Randolph, or Randall, who represented Queen Elizabeth at Queen Mary's Court in Edinburgh, contains the following passage, and leaves us no doubt as to the identity of the disease with that known at the present time:

"May it please your honor, immediately upon the Queen's arrival here she fell acquainted with a new disease, which is common in this town, called here 'the new acquaintance,' which passed through her whole court, neither sparing lord, lady, nor demoiselle, not so much as either French or English. It is a pain in their heads that have it, and a soreness in their stomach, with a great cough that remains with some longer, with others a shorter time, as it findeth apt bodies for the nature of the disease. The Queen kept her bed six days; there was no appearance of danger, nor many that die of the disease, except some old folks."

It seems that the name influenza was first commonly used in a later visitation of the disease in 1658, and that the word came from the supposed influence of the stars in causing it. In speaking of this, Willis says: "Suddenly a distemper arose, as if sent by some blast of the stars, which laid hold on very many together; that in some towns, in the space of a week, above a thousand people fell sick together."

From this time on many epidemics passed over Asia, Europe, and America.

In 1889–90 and 1899–91 the disease was very prevalent here in Philadelphia, and Pepper notes the effect of its presence upon the population generally. He says: "It was common to have patients come to physicians' offices or to find patients walking about their houses with a temperature of from 102.5° to 104°. A widespread febrile tendency manifested itself; the most trivial ailments were attended with high fever; the entire population seemed to be infected." It was during this epidemic, also, that much stress was laid upon the types of the disease; with the general symptoms of every attack were associated pulmonary, gastro-intestinal, or severe disturbances of the cerebro spinal functions, according to the individual intoxication. Our idea of the infectious character of the outbreaks was strengthened by the discovery by Pfeiffer, in 1892, of a special bacillus. Later observations associate the pyogenic cocci and pneumococci with Pfeiffer's bacillus.

The pulmonary or pneumonic cases with high fever, decided dyspnœa, no characteristic sputum, and with physical signs of consolidation appearing only after three or four days, exhibit a profound depression of nerve force, and resemble pulmonary lesions arising after section of the vagi. The fact that the physical signs are delayed is due, probably, to the lung involvement being really a bronchopneumonia, as Albu has pointed out. A genuine croupous pneumonia is also modified by the influenzal poison.

Goodhart calls these pneumonic cases "pulmonary influenza," and draws attention to another phase of the attack: that after some days of fever with dyspnœa, there is a fall of the temperature to normal for twenty-four hours, then a recrudescence wrongly attributed to some indiscretion, but probably part of the original attack. With this relapse occurs a deepening of the pulmonary symptoms, with the invasion of the lung by the peculiar glutinous creeping exudate, which leads in many cases to a pneumonia which knows no crisis. In these cases pleurisy and empyema are not uncommon complications. The death-rate is high.

The two cases which I shall report to you to-day exhibit the pulmonary type.

Case I.—R. H., aged fifty years, was taken with high fever, constant cough, with profuse mucopurulent, finally blood-streaked expectoration. Pain through chest, but especially severe in right hypochondrium. She had been a semi-invalid for years, suffering with some obscure spinal ailment, and was not outside her own home for months before this illness. The attack was preceded by several days of malaise, with slight fever and bronchitis. For two days the temperature varied from 102° to 104°; pulse 100 to 115; respiration 28 to 34. Physical signs, beyond lessened vesicular murmur and slight bronchitis, negative. On the third day evidences of consolidation of whole right side appeared. The temperature varied between 101° and 104°; pulse 110 to 128; respiration 30 to 34. Delirium appeared, pain in chest and abdomen

became so severe as to necessitate hypodermics of morphine every six hours. Finally, on the sixth day vomiting supervened, expectoration became prune-juice in type, active delirium gave place to unconsciousness, pulse became weaker and more rapid, and death resulted on the seventh day from the initial fever. Two days before fatal termination, physical signs showed involvement of left base.

CASE II.—J. M., aged forty-six years. A strong, well-built woman, with no organic lesion save a somewhat dilated heart, with mitral systolic murmur. Has had eight children, several miscarriages. Two attacks of eclampsia, the last on June 29, 1896, when I delivered her of a six months' fœtus after artificial dilatation. Her recovery from this was slow, owing to the cardiac condition, so that her usual health was not regained before the autumn of 1897. She had had several mild attacks of croupous pneumonia and a mild attack of catarrhal pneumonia in earlier life. After several weeks of malaise, blue lips, and shortness of breath on exertion or after excitement, she had a severe chill on February 5, 1899. Temperature 103.2°; pulse 122; respirations 20.

For two days these symptoms persisted and deepened; temperature 103.8° to 105.2°; pulse 120 to 130; respirations 32. Pain in right side in region of liver was severe. Constipation, heavily coated tongue, anorexia, sleeplessness, and cough. No chest symptoms beyond diminished respiratory murmur. After a pack the temperature fell to 100.8° and remained down for twenty-four hours, then rose again to 102.2°. On February 9th, four days after the initial chill, could first be detected fine, moist, inspiratory râles over whole right lower lobe, dulness on percussion, and bronchial breathing quickly supervened. The urine was dark, contained blood, and was one-half albumin on boiling. Between February 9th and February 13th the temperature range was 99.8° to 103.6°; pulse 118 to 145; respirations 34 to 36; regular, tension fair, first heart sound good.

By February 13th whole right side was consolidated. At this time, eight days from the onset, we first secured a copious bowel movement; it was black, tarry in consistence, and so foul-smelling that deodorants for room and bed were freely used. From this time the abdominal pain lessened, appetite improved, tongue cleaned and breath sweetened. On the eleventh day of the disease the patient passed sixty ounces of almost normal urine in twenty-four hours.

On February 18th, thirteenth day, evidences of resolution appeared in right side of the chest, but at the same time the dulness of the lower right back became more absolute; the absence of respiratory murmur, vocal resonance and vocal fremitus made an effusion most evident.

By February 24th, nineteenth day, the increasing rapidity of pulse and respiration, with no decrease in exudation, made aspiration necessary; 195 c.c. of turbid, slightly blood-stained fluid were withdrawn. I regret to say this was not examined for micro-organisms; only the presence of fibrin masses, pus, and blood were noted. Temperature 100° to 102°; pulse 120 to 160; respirations 24 to 32. From this

time on the temperature crept somewhat lower; although often rising to 101°, it would at times remain for hours below 99°, pulse 115 to 125, never irregular; respirations 22 to 25. Patient emaciated in spite of forced feeding by mouth, skin, and rectum. Her cough was most troublesome, expectoration slight, no tubercle bacilli. An area of movable dulness persisted in right back, low down. The blood count: white blood-corpuscles 16,500, red blood-corpuscles 5,249,500.

On April 27th, seventy-second day, patient was moved on a bed to the country. There was no decided change in her symptoms for weeks, the same rapid pulse, varying from 115 to 125, respirations 28 to 30, temperature 99° to 101°. Appetite was capricious, and vomiting of undigested food often occurred; sleep fitful, at times necessitating a hypnotic. The movable dulness decreased, but left an area below the eighth rib in right back and posterior to post-axillary fold, where respiratory murmur was very distant and vocal fremitus very slight. The right front of the chest above eighth rib was fairly clear. Over the left front could be heard occasional fine râles, and the patient complained of a feeling as of bees on that side.

Toward the last of June the patient grew thinner and thinner, appetite lessened, so that even her favorite egg-lemonade was refused; cough grew most tormenting, and severe pain developed about right breast. By July 1st there was a decided lifting and enlargement of right breast, as if from abscess beneath the gland. There was, however, no bulging of the interspaces; no dislocation of the apex-beat. The dulness over lower right front was not even absolute. So sure was I that we had a penetrating empyema to deal with that exploratory puncture was resorted to; but either the needle was too small or the pus too thick; we got no result.

By July 10th, five months and five days, however, a redness and bulging in seventh interspace to right of nipple transformed the case into a surgical one. This change came with a suddenness which surprised the nurse in charge. The patient was almost *in extremis* by the time that Dr. W. J. Taylor reached her at Brandywine Summit. He quickly incised the chest wall, evacuating a quart of pus, and inserted a drainage-tube. The patient now began to mend, and two weeks later she was brought on a bed to her home in Philadelphia.

Two days after this, as the drainage was insufficient, a large opening was made and a part of the eighth rib removed. This gave free exit to thick caseous pus which filled the lower part of the pleural cavity. Gradually her temperature sank to normal, but for fully a month the pulse kept constantly above 110; the respirations sank to 25 within the month.

After this her recovery was slow but sure; the discharge from the side continued to be profuse, grew thicker and more greenish, so that four months after the removal of the rib irrigation was cautiously used. This decreased the discharge markedly, and at the present time there is comparatively little, although the opening is thoroughly patent.

When the patient was first able to be up the right shoulder was markedly lower than the left, and she seemed to bend to the right side.

Now she sits and stands quite erect. The respiratory movement is still, however, much more marked on the left, where a compensatory emphysema has developed.

The breath sounds all about the neighborhood of the opening are very faint, and dulness on percussion distinguishes the back below the eighth rib in the line of incision. The patient's weight has increased from 85 to 116 pounds. Her pulse-rate has decreased to 80 or 90.

The treatment of these cases was, necessarily, symptomatic. Tonics, sedatives for cough, hypnotics, etc., were used. The list in detail would be a long one. Above all, feeding of easily digested food in quantities that could be borne was insisted on from the first. The rapid heart in Case II. was apparently uninfluenced by digitalis in any form or by strychnine, although both drugs were used freely and over a length of time.

Sansom, in speaking of the effects of influenza upon the heart, notes this simple acceleration of the pulse, and says that it may persist for long periods or be intermittent; that it may begin with the initial fever or come after months or weeks. In this patient, as in those he speaks of, the vasomotor tone seemed unchanged. Curiously enough, too, her old cardiac dilatation was not increased by this long-continued acceleration, but most likely here the digitalin helped us.

BIBLIOGRAPHY.

1. Sir Thomas Grainger Stewart. Address before the British Medical Association, Bristol. London Lancet, 1894.
2. Pepper. American Text-book of the Theory and Practice of Medicine.
3. Osler. Osler's Practice of Medicine.
4. J. C. Wilson. Pepper's System of Medicine.
5. Goodhart Allbutt's System of Medicine.
6. Sajous' Annual.
7. Althouse. Influenza: its Pathology, Symptoms, and Complications, 1892.
8. Albu. Deutsche medicinische Wochenschrift, February 15, 1894.
9. Nothnagel. Internat. klin. Rund., January 12, 1900.
10. Willis. The Description of a Catarrhal Fever Epidemical in the Middle of the Spring in the year 1658. Practice of Physick, 1684.
11. Sansom. Effects of Influenza. London Lancet, October 21, 1899.

DISCUSSION.

DR. GRISCOM: I saw the patient first in the early part of July. We brought her home on the train. The family at that time thought she was dying. The operation was done, and after that the main treatment was dietetic. She lived largely on eggs, and ate as many as fourteen in twenty-four hours. She gained steadily. Dr. Goodwin has told everything else concerning the case.

DR. BITTING-KENNEDY: I saw a patient a couple of weeks ago, similar, I think, to the one described by Dr. Goodwin. The case was that of a lady sixty-six years old and in very good health. She was not my patient but a personal friend, and I saw her only through her physician's courtesy. The attack of influenza began with inflammatory laryngitis, bronchitis, and pneumonia symptoms. She lived fourteen days, and before she died became delirious. She complained of abdominal pain, and in her case constipation was marked; it was with a great deal of difficulty that that symptom was

relieved. She did not expectorate a great deal, and apparently death was due to the fact that she did not expectorate; she seemed to drown herself in her own secretions. It was a very interesting case, and the picture was different from that of ordinary croupous pneumonia. The condition scarcely seemed to be a pneumonia. At one time there were enough signs to diagnose pneumonia, but within a few hours all the characteristic signs of pneumonia disappeared.

DR. GOODWIN closes: I have nothing more to add. I have looked over the cases of perforating empyema, but found none particularly interesting as bearing upon this case. Many occurred in children in which the rupture was cured. Those reported were not particularly in connection with influenza, and, therefore, were not especially interesting in connection with this case.

CLINICAL NOTES OF A CASE OF HÆMATURIA AND PYURIA.

By JOHANNA BAPTISTELLA LEO, M.D.,
NEW YORK CITY.

In reviewing the literature of urinary diseases of the female its meagreness is at once apparent. Howard Kelly states that it is the most neglected field in the whole range of medicine. Stray articles with isolated cases appear from time to time in the medical journals, while treatises are few and are seldom exhaustive. That the urinary diseases of the female necessitate a separate literature from that of the male stands without argument.

Progress in the acquirement of knowledge in this field has been slow. The catheter was known and used by Erasistratus 340 A.D. Ætius, 502–575 A.D., defined ulcerative bladder affections, and Paul of Ægina, 670 A.D., treated them with local injections through the catheter.

The attitude toward the diseases of the female during the Middle Ages was not prone to aid scientific research, for their treatment was relegated to ignorant and untrained hands, as Hippocrates himself did not consider this an honorable occupation for a physician. Again, Europe was influenced by Arabic law and lore, and the Arab's religion forbade men to practice obstetrics and gynecology or do post-mortems. False modesty contributed largely to a lack of inquiry into these diseases, which require an examination and exposure of the female genitals. One end of a sheet tied around the neck of the patient and the other end of the same sheet around the neck of the accoucheur was not a method calculated to aid scientific research. This was one of the methods of surmounting the modesty question at the time men began to practice obstetrics in the seventeenth century. The lack of suitable instruments permitting an examination of the various portions of the urinary tract made accurate scientific investigation impossible, and this aided to retard the progress in this department of medicine. G. Simon dilated the urethra with hard-rubber bougies, and laid down exact rules for the limits within which dilatation should be done. Through the dilated urethra the finger was introduced to examine the interior of the bladder by the sense of touch. Gruenfeld and Rutenberg made the modern cystoscope possible.

Of the written works, Scanzoni's monograph in 1834 was the first treatise on urinary diseases of women. Skene's book on the *Diseases*

of the Bladder and Urethra in Women was published in New York in 1882, Winkel's in 1886, Kelly's in 1895, and Fritsch's in 1897. These virtually represent all the treatises that have been written on this important subject.

In reviewing the literature of urinary diseases of women, and especially that of hæmaturia, I have been disappointed in not finding any case treated purely medically detailed in full. Therefore, you will perhaps pardon me if I digress from the beaten path and report in detail a case which has been most interesting and instructive to me.

Family History. Miss K. B., aged twenty-two years, a milliner, American, born of Irish parentage, consulted me for the first time March 16, 1900. Her family history was negative. Her personal history up to the beginning of the present condition was also negative.

Early in October, 1899, after taking a long walk, she noticed that she passed bloody urine. At first she mistook this for her menstrual period, but the blood continued to show at each micturition, and continued to do so up to the day of her visit. She had had no medical advice, for reasons of modesty forbade her going to a male physician. Her periods, hitherto regular, but always scanty, ceased in October, 1899. Previous to October, 1899, for over two years she had had a very irritable bladder, having had to urinate too frequently, especially at night. The urine was always thick and cloudy, but until October, 1899, had contained no blood, though she had more or less pain during and after urination, and often continued vesical tenesmus until she shook with chills. She is tall and slender, and with this prolonged and persistent hæmaturia of uncertain origin, which has rendered her profoundly anæmic, her sallow face and the large, wistful eyes anxious to catch a word of hope from me, she at once makes an indelible impression.

A specimen of the urine passed in my office needed no microscope nor reagents to pronounce it pathological urine. In a conical glass it settled into three distinct layers—a grayish layer, then an opaque red layer, and a layer of urine in which floated reddish, flocculent masses and a small quantity of clear amber urine. Its consistency was thick and pultaceous. Her pulse was very weak and rapid, and there was a distinct blowing systolic murmur heard all over the heart. The lungs were normal. The right kidney was distinctly enlarged and movable, and could be easily palpated as an abdominal tumor. The internal examination revealed a small anteflexed uterus drawn to the left. The anterior vaginal wall was thick and hypertrophied, but there was one thin area which was like a pocket, and which, if pressed up toward the bladder, caused a throbbing sensation.

As the patient insisted on going to work from 6 A.M. to 11 P.M., active bladder irrigation was out of the question. Draining by the administration of a diuretic which acts mechanically, such as large draughts of water, was advised, and an attempt made to disinfect the urinary tract by sodium salicylate in 10 gr. doses every four hours, and salol, 5 gr. every four hours; a milk diet was advised. The patient returned two days later much brighter. I irrigated the bladder with a satu-

rated boric acid solution, using the glass catheter attached to the fountain syringe. The patient was urged to retain as much of the solution as possible when the stopcock was closed and the rubber tube detached from the catheter. Blood and clots constantly stained the solution, even though six quarts had run through. Finally a 25 per cent. solution of commercial hydrogen peroxide was run in, and was replaced by a final boric acid solution, which was allowed to remain. To control the anæmia, red bone-marrow was given and the previous treatment continued. On March 22d, patient reported the urine quite clear, but stated that in the morning she had prolonged chills. At 9 P.M., the time of her visit, her temperature was 104.2°, pulse 122, respirations 24, skin cold and clammy. Irrigation was repeated and the patient ordered home to remain in bed, to which she at last consented.

From March 22d to April 1st patient was very much encouraged by the clearing urine, but the temperature remained 100° or over. On April 1st, after nine days' subsidence, the hæmaturia returned. During the entire month of April the patient was in bed, nursed with great care; the bladder was irrigated daily; the hæmaturia continued, in spite of urotropin, fluid extract of ergot, lithiated hydrangea, and ferruginous tonics. On April 12th patient said she passed very little urine, and was troubled with a burning sensation in both ovarian regions; an hour after irrigation patient suddenly passed a large quantity of blood, after which she felt exhausted. On April 17th Dr. Mary Putnam Jacobi saw the case in consultation with me. She drew off the urine into four separate glasses, and in each glass was a well-mixed, intensely bloody urine. She diagnosed the case as one in which the hæmaturia was either due to a tubercular pyelonephritis or a nephrolithiasis. A change was made in the ergot, which was now given in drachm doses per rectum. This could not be tolerated, and a mucous diarrhœa, with rectal tenesmus, ensued, very distressing to the patient; the temperature, which for four days had been normal, again rose to 100°–101°–102°. On April 25th, after much coaxing, the patient at last consented to go to the hospital. Here she was obliged to retain the urine six hours, when a very bloody specimen was drawn by catheter. On April 27th Dr. William R. Pryor did a cystoscopy under ether. The bladder mucosa, with the exception of a small area of normal tissue near the left ureteral orifice, was found studded with tiny gray prominences surrounded by inflamed areas; also linear pits deeply congested with roughened ridges for walls were to be seen. There was desquamation of the covering epithelium of the entire vesical mucosa, leaving a very roughened surface. Bridging the bladder folds were trabeculæ or adhesive bands. No blood was seen to spurt from either ureteral orifice.

As the patient absolutely refused a nephrectomy, and as the bladder condition with its infectious material might have endangered the integrity of the kidneys, individual catheterization of the ureters was omitted. Thus the only opportunity of establishing beyond a doubt the source of hæmaturia as residing in either kidney was lost. That

there was a severe ulcerative hemorrhagic cystitis was established by the cystoscopy, but the condition of the kidneys is still obscure.

The cause of this ulcerative process, whether purely catarrhal or due to the gonococcus, tubercle bacillus, or colon bacillus, was to be decided by the bacteriologist.

On April 28th the patient returned home, and the following day, at 1.30 P.M., the bladder was irrigated, first with a boric acid solution, followed by a one quarter of 1 per cent. solution of pure iodine crystals in sterile water. No sooner did the iodine touch the bladder than the patient was in agony. I at once reduced the solution to one-sixteenth, then to one-twenty-fifth of 1 per cent., then used sterile water only. The patient looked alarmingly ill at once; she was ghastly, and threw her head and body wildly from side to side. At 4.30 P.M. word was sent me that she was frenzied with pain, tossing to and fro; that she was vomiting and purging and had abdominal lumbar pains. The vomit was bluish, as if a bluing bag had been squeezed into it. The face was cyanosed, pulse rapid and thready, temperature 99°, thirst excessive, and urine scanty. Symptoms rapidly disappeared under morph. sulph. and stimulants.

On April 30th the hæmaturia was very much reduced; shreds of tissue, as if the vesical mucosa were peeling, passed in the urine ever since the iodine instillation.

From May 3d to 15th iodine irrigations, beginning with one-fiftieth of 1 per cent. solution, and increased to three-fiftieths of 1 per cent., were daily made. Patient was gaining strength, and for the first time since October, 1899, no blood was visible to the naked eye. Temperature also was normal for days in succession.

After April 30th patient was on the following treatment: Sodium benzoate, gr. 20 every three hours, and daily irrigations of pure iodine crystals in sterile water, red bone-marrow, and Russell's emulsion of mixed fats. Her diet was milk and cereals, and she rested in bed.

From June 1st to 7th: On June 2d patient began to menstruate for the first time since October, 1899; the blood was of a rich color and not scanty. On the same day her brother, the main support of the family, was brought home dead, having died of heart disease. Hæmaturia at once reappeared (it had been absent sixteen days); whether from shock or from the general congestion attending the menstrual period, it is difficult to state. On June 5th the urine was again like clear blood.

From June 7th to 30th: From the 7th on, patient was supplied with a recurrent glass catheter to supplement my work at home in keeping the bladder well irrigated. She was taught to catheterize herself with great ease. No blood showed during the rest of the month. On June 28th, 29th, and 30th patient menstruated. No blood showed in the urine till July 1st, when patient saw a few clots for one day. No blood during the entire month of July till after July period, July 31st, when again it appeared for a day and disappeared. Since June, 1900, the patient has gained in strength; her

menstrual periods have been re-established; the hæmaturia has decidedly lessened in amount, and the urine has become far clearer.

By September, 1900, she was able to retain the urine five hours during the day, a decided gain in comfort. She returned in this month to her exacting trade with its long hours, and has been at it every working day, save two, since. Occasionally, either before or after the menstrual period, hæmaturia will reappear for a day or two; then the urine will again become clear. Patient now has no pains during or after micturition.

On April 20, 1901, I did a cystoscopy with the smallest tube of a Pryor cystoscope. To my great delight I found a very different picture of the vesical interior from that of last year. The gray prominences and red pits have all disappeared and have been replaced by a smooth though still hyperæmic mucosa, especially the trigone, which is intensely red. This was touched up with a 5 per cent. silver nitrate solution, since which time the nocturnal urinations have become less frequent. Though the patient has been benefited by the treatment, I can still ask the questions, Whence comes this hæmaturia, and what is its cause? One procedure will throw further light on the diagnosis and treatment, and that is the individual catheterization of the ureters, which I hope to do soon. Guesses will not answer; accurate scientific work alone will be rewarded with a revelation of the true facts.

So alarming a symptom as hæmaturia is here raised to the rank of a disease, as it is a strong evidence of a disturbance in the functional or organic integrity of some part or parts of the urinary tract, and its source must be determined, so that a rational treatment may be instituted for the removal of its cause.

Its *source* may be either in one or both kidneys, the ureters, or bladder; its *cause* may be due to many pathological conditions, while its mere presence is not diagnostic of any particular lesion, nor does its color or quantity tell whence it comes.

The causes of hæmaturia may be either local or constitutional. The local causes may be either mechanical, chemical, or microbic. Among these may be mentioned:

1. Tumors in any part of the urinary tract.
2. Tumors pressing on any part of the urinary tract.
3. Stone in any part of the urinary tract.
4. Acid crystals.
5. Traumatism.
6. Tubercular, gonorrhœal, or other microbic infection.
7. Parasites.
8. Supplementary hemorrhage in menstruation.
9. Congestion.
10. Increased vascular tension in kidney, produced by torsions of renal vessels or by torsion of the ureters.
11. Passive hyperæmia, as occasioned by pressure on renal veins; reflex spasm of arterioles, which may occur in catheterism, anuria due to hydronephrosis, or intestinal obstruction.
12. Extirpation of one kidney.

Among the constitutional causes are:

1. Increased blood pressure.
2. Changes in the vessels.
3. Inflammatory processes.
4. Exanthemata, as measles, scarlet fever, smallpox.
5. Scurvy and purpura, hæmophilia.
6. Syphilis.
7. Pregnancy.
8. Neoplasms, especially cancer.
9. Drugs, as rhubarb, cantharides, turpentine, sulphonal, potassium chlorate, carbolic acid.
10. Malaria.
11. Raynaud's disease.
12. Bright's disease.
13. Diphtheria.
14. Prolonged marches.
15. Gymnastic exercises.

Of all these causes, local tubercular or colon bacillus infection and supplementary hemorrhage in menstruation, or hemorrhage due to menstrual congestion, are the only causes to which a careful study of the history of the case will permit us to ascribe the patient's symptoms.

The diagnosis of tuberculosis of the kidney or bladder, or both, based on the early symptoms given by the patient, seemed rational, and yet the subsequent clinical history of the case, the amelioration of symptoms, the absence of tubercular lesions in other parts, the gain in health and strength, though she is by no means robust and blooming now, made me very doubtful. But the employment of the method of Dr. Reynolds, of Boston, which has been recommended especially for cases obscure in character, that is, the injection of the centrifuged urine obtained in a sterile manner into guinea-pigs proving positive, made it certain. Three guinea-pigs were inoculated at different times, and in each tubercular lesions were found. Had the urine been obtained from a non-tubercular kidney or bladder the guinea-pigs would not have been infected with tuberculosis; that they thus succumbed proves that the urine injected contained tubercle bacilli. That they developed tuberculosis makes an individual characterization of the ureters, followed by the injection of separate centrifuged sediments into separate guinea-pigs, imperative to determine which is the tubercular kidney. In one of the cases operated on by Dr. Pryor in the Polyclinic the right kidney was palpable and tender, and this, together with bladder symptoms, led to a diagnosis of tuberculosis of the right kidney; but catheterization of the ureters showed that the left kidney secreted the tubercular urine, and subsequent abdominal operation substantiated this, for the left kidney was found small when extirpated and riddled with tubercular foci; the right kidney had through its vicarious action for the left kidney increased in size, but its urinary secretion was normal. This patient made a splendid recovery, with a total disappearance of all the symptoms. Had the operator arrived at his diagnosis by the ordinary methods the results would have been disastrous.

Dr. Charles P. Noble, in a little monograph entitled *Remarks on Nephrectomy, with a Plea for the More Certain and Earlier Diagnosis of Conditions Requiring It*, reports nine cases of nephrectomy, in only two of which the exact status of each kidney had been determined prior to operation. Yet he claims that opinions must *not* be based on *inductive reasoning* alone, but rather upon *demonstrated facts*, and urges the *early diagnosis* of kidney and bladder lesions by employing the exact methods now at the disposal of the intelligent practitioner.

And Dr. H. Kelly states that as we have at our command a precise way of estimating the functional value of each kidney judged by the amount of urine discharged and its constituents, a fact of the highest importance in forming a prognosis and deciding upon operation; it is, therefore, *incumbent* upon the surgeon in all cases to give the patient the benefit of this analysis before operating.

Since the menstrual flow was re-established in June, 1900, the hæmaturia becomes apparent either directly before or after the period. The cystoscopic examination showed an ulcerative hemorrhagic cystitis. It is reasonable to argue that at each recurring period the congestion of the contiguous organs alone leads to a further congestion of the bladder and the blood oozes from it, a typical parenchymatous bleeding, which continues so long as the congestion continues and stops when the cause ceases to operate.

Dr. William K. Otis claims that the congestion of the uterus at the time of the menstrual flow may cause sufficient congestion of the bladder to account entirely for a hæmaturia. Dr. Fritsch, a German authority, holds that during menstruation micturition is far more frequent, not alone due to the enlarged uterus and consequently to mechanical reasons, but dependent on the hyperæmia and congestion produced in the bladder, and holds that even hæmaturia may be explained in this way.

For the past six months I have asked my clinic patients to observe the frequency of micturition before, during, and after the menstrual period, and have been able from the data thus gathered to confirm the observations of Dr. Fritsch.

In the case of Miss K. B. the number of micturitions is increased a few days before, during, and after the flow, and it is reasonable to expect that during this hyperæmic state of the bladder, due to the congestion of the uterus, this parenchymatous oozing recurs and that it is directly attributable to this rhythmical congestion of these contiguous organs, especially as this bladder shows an infection by the colon and tubercle bacillus, and consequently a mucosa weakened in its resistance by chronic inflammation.

Although numerous chemical, microscopical, and bacteriological examinations of the urine were made, at no time could Dr. Berry, who so enthusiastically did all the laboratory work, find any clue that would justify a diagnosis of renal involvement; no casts and no renal detritus were ever found.

According to Gumprecht, fragmentation of the red blood-corpuscles is significant of a renal hæmaturia, but at no time were there frag-

mented red blood cells found in the centrifuged urine. Both Gumprecht and Friederich claim this morphological change in the red blood cell as a point in differential diagnosis between renal and vesical hæmaturia. The argument is that blood cells in the uriniferous tubules are fragmented because of the action of the concentrated urea and the influence of the renal epithelium, while urea as it exists in the urine—*i. e.*, diluted—is powerless to bring about this fragmentation, even after the urine has stood in the warming oven for from twelve to fifteen hours. This theory was confirmed by animal experimentation and observation of cases of hæmaturia occurring with nephritis. In the case of large renal hemorrhages this would obviously not hold good, but only in small parenchymatous hemorrhages. Gumprecht claims it to be a reliable test.

The percentage of albumin found in each specimen of urine examined was wholly accounted for by the number of red blood-corpuscles and pus cells, and bore a direct ratio to the number of red blood cells and pus cells. A pseudo-albuminuria was further confirmed by finding no casts. A nephritic involvement would have brought its additional quota of albumin.

Dr. Skene asserts that the normal bladder does not absorb anything save possibly a little water—*i. e.*, from 2 to 3 per cent., as proven by increase of 2 to 3 per cent. of watery elements after artificial vesico-vaginal fistula, save when its epithelial surface is displaced or destroyed. When abrasion does occur (proven by animal experimentation) absorption is rapid and its effects are marked. On this Dr. Otis bases one of his tests for the determination of the source of the hæmaturia. After the bladder has been washed out clean with a boric acid solution a small amount of potassium iodide (gr. x to xv) is thrown in. After waiting fifteen minutes, the saliva is collected and tested for iodine by the starch method. If iodine is found, then the hæmaturia is due to a bladder lesion, which, being deprived of its protective epithelium, has allowed the absorption of the iodine. In Miss K. B.'s case this explained the rapid absorption of the iodine which led to the iodine poisoning on April 30, 1900.

From the centrifuged urine a year ago a pure culture of bacillus coli communis was made. Was the enlarged tender right kidney an ascending pyelitis or pyelonephritis, due also to bacillus coli communis infection? If a pyelitis or a pyelonephritis ever existed, it must now be cured, and instead there may remain the healed, indurated, cicatrized, granular, contracted kidney, similar to the kidney of Martin and Peterson's dogs, on which uretero-rectal anastomosis was performed, which promptly developed a pyelonephritis, due to the infection by way of the ureters, caused by the bacillus coli communis.

As laryngology and ophthalmology have made huge strides since the introduction of the laryngoscope and ophthalmoscope, so through the perfection of the cystoscope will the bladder, hitherto that "secret and mysterious space," be illumined and yield us sources of information in regard to the uropoietic system which without that instrument are unattainable.

The evolution of the cystoscope is interesting. From a closed fenestrated tube, with complicated divisions for the transmission of light and its reflection through a fluid medium by a series of mirrors, or, if the source of light was at the distal end of the tube, a complicated arrangement for circulating water to dissipate the heat generated by the lamp, instruments only for ocular inspection of the bladder not for local therapy, it has evolved into the Pryor cystoscope, a very simple, straight tube with a carrier for the diminutive electric lamp at its distal end, illuminating directly the site to be inspected.

This tube is introduced with its lumen closed by the obturator; the latter when withdrawn causes the evacuation of the bladder and its refilling with atmospheric air. The tube, no longer closed at its distal end, permits local applications to be made directly to the vesical mucous membrane illumined by the electric lamp. Dr. Kelly, of Baltimore, has the source of light external to the tube, *i. e., a reflected light;* but the only sound principle is to have the source of light at the site of the lesions—a principle recognized by Dr. Max Nitze, of Berlin—for the intensity of the illumination decreases as the square of the distance, therefore the further the source of light is from the site to be illumined, *i. e.*, the vesical end of the tube, the less intense will it be; then, too, a shadow of introduced instruments falling on the site obscures the field of the investigator, as the instruments interfere with the entering light.

Dr. Max Nitze, of Berlin, requires for successful cystoscopy:

1. A patulous urethra for the tube.
2. Transparency of the bladder contents (boric acid solution).
3. Possibility of filling the bladder with 100 to 150 cubic centimeters of fluid.
4. Internal urethral sphincter intact to avoid the escape of fluid.

He has a wonderful set of reflectors at various angles in the tube, thus producing an image of a large site of the interior of the bladder (Gesichtserweiternden Apparat) without moving the tube. Through the cystoscope he has been able to photograph some bladder lesions, which photographs he has collected into the marvellous production, his *Atlas of Cystoscopic Views*, published in 1900.

For the early and accurate diagnosis of diseases of the uropoietic system the cystoscope as an instrument of precision is indispensable. It therefore behooves us all, both as progressive general practitioners and as gynecologists, to be familiar with its technique.

CHEMICAL AND BACTERIOLOGICAL EXAMINATIONS OF URINE IN A CASE OF HÆMATURIA AND PYURIA.[1]

By JANE L. BERRY, M.D.,
NEW YORK CITY.

The first examination of urine in this case was made March 19, 1900. The results of the examination were as follows:

Appearance. When received, whole specimen was color of bright red blood. On standing, a heavy, reddish-gray deposit quickly separated, leaving urine above still bright red, color later changing to reddish yellow in superficial layer. Specific gravity, 1022; reaction, strongly acid; albumin present, 0.15 of 1 per cent. Sugar absent.

Microscopical Examination. Casts, none found; epithelium, few squamous cells. Leucocytes, very numerous, both intact and with fragmented nuclei; red cells, numerous, and generally very perfect in appearance, only a very small proportion showing fragmentation; crystals, a few uric acid; bacteria, immense numbers of large and small very active bacilli. Films stained with Loeffler blue show bacilli in general appearance resembling the colon bacillus, and very numerous. In many films stained by Gabbett's method and examined for tubercle bacilli, no tubercle bacilli found.

On March 22d, a second specimen of urine received, this having been obtained by Dr. Leo with especial care, in order that it might be used for bacteriological tests. In chemical and microscopical characters this was identical with the first specimen. With all precautions against contamination, a heavy sediment was obtained by means of the centrifuge, and from this sediment numerous cultures were made in tubes of neutral bouillon. After twenty-four hours in the thermostat there was an abundant growth in all tubes, consisting of pure culture of bacilli of the same type as those first found in the urine. Cultures were made of this organism on various media, *i. e.*, glucose and glycerin agar, lactose, litmus, gelatin, potato, Dunham solution, fermentation tubes, etc., and it was found to be identical in every way with the bacillus coli commune, except that when grown in dextrose-free bouillon no indol was produced. There was no clumping when tested with typhoid serum. As the indol-producing function of the colon bacillus is sometimes lost under unfavorable conditions, and, as there was a perfect correspondence in all other respects, it was concluded that the organism in question was undoubtedly one of the many forms of the colon bacillus.

[1] See preceding paper.

In a second series of tests, made one month after the first, the above organism was again obtained, this time in conjunction with a white staphylococcus, the latter sometimes occurring in pairs, but not decolorized by Gram's stain, and having no resemblance to the gonococcus.

In a third examination, begun recently and not yet concluded, a growth was again obtained of two organisms—a bacillus and a staphylococcus, the latter peculiar in its tendency to a diplococcic intracellular arrangement, but in no other way suggestive of the gonococcus, both manner of growth and staining qualities being very different. So far as observed, the bacillus last found does not give the typical coli communis reactions, but the question of its identity requires further study, since it is possible that this is a degenerated form of the organism, which may again show characteristic properties under favorable conditions of culture.

Many specimens of urine from this case have been examined chemically and microscopically during the past year, the results showing so little variation that a separate report of the examinations would add nothing to the interest of this paper. The amount of pus and blood has always been in direct ratio to the clinical course, increasing with each exacerbation of symptoms and decreasing as the patient's condition improved. The specific gravity has always been moderate, ranging between 1012 and 1022. The amount of albumin present has always been low, from 0.15 to 0.05 of 1 per cent., not more than might be fully accounted for by the amount of pus present. The red cells have always been noticeable for their fresh and unchanged condition, only a very small proportion having any appearance of fragmentation. The epithelium has been of the squamous variety, as a rule, only a few cells of the most superficial layer being present, while repeated and careful examinations of a large number of slides by the aid of a movable stage have always shown an entire absence of anything in the least suggestive of renal casts. These results would argue against the probability of any parenchymatous renal involvement.

From the beginning a special effort has been directed toward the discovery of tubercle bacilli in the urine of this patient. Innumerable slides of the urine sediment have been stained and examined, many hours having been given to the search; but up to the present time no tubercle bacilli have ever been found in the urine specimens. However, as it is a well-known fact that in some cases the bacilli may be very few, the main reliance has been placed upon the one crucial test, namely, animal inoculation.

On March 22d a medium-sized guinea-pig was inoculated, both subcutaneously and intraperitonally, with 2 c.c. of the heavy purulent sediment obtained from the centrifugalized urine. A small local abscess developed at the point of inoculation, and the guinea-pig lost in weight. On May 19th the animal was chloroformed. There was considerable congestion throughout the body, but microscopically no evidence was found of tuberculosis. Films were made from all the organs and stained by Gabbett's method, but these showed no tubercle bacilli, and in many sections from the hardened organs

stained and examined at this time no tubercles were found. Bouillon tubes inoculated from the organs gave no growth.

On June 5th a second guinea-pig was inoculated in the same manner as the first, with 2 c.c. of urine sediment. In this case there was no local reaction, but the animal quickly lost in weight, becoming greatly emaciated and showing every indication of a rapidly advancing tuberculosis. Eleven weeks after inoculation the animal was chloroformed. All the organs were much congested, and in the liver and spleen a few tiny white points were found suggestive of tuberculosis. The lungs showed consolidation, but no tubercles were evident microscopically, and no cheesy lymph nodes were found. Sections made from the organs of this guinea-pig showed large and small miliary tubercles, most abundant in the liver and spleen. In the lungs there were extensive areas of tubercular consolidation. No growth in broth cultures from organs.

Previous to the death of this animal a third guinea-pig had been inoculated as before. This animal showed no local reaction, and no evidence of illness was observed. On February 5th, a little over four months from the time of inoculation, this pig died in the laboratory. All the organs showed the most extreme degree of congestion. There was no evidence microscopically of tuberculosis, but in sections from the various organs miliary tubercles were found, not so abundant as in the second pig, but unmistakably present in both liver and spleen.

The results obtained in the second and third animals led to a fresh examination in the case of pig No. 1, and on making new sections of different parts of the organs small miliary tubercles were discovered in the case of this animal also, distributed through the liver, spleen, and lung.

In pig No. 2 sections of the liver stained for tubercle bacilli showed the bacilli present in the tissues.

It will thus be seen that the chain of evidence is complete. The fact that after inoculation with the urine three animals had developed tuberculosis, as shown by the presence of tubercles and tubercle bacilli in the organs, leaves no room for doubt as to the existence of tubercular infection in this patient. At the same time there is a striking discrepancy between the severity of the bladder lesions and the negative result of the search for tubercle bacilli in the urine sediment. While it is a common experience to find the bacilli very scanty where there is a moderate degree of bladder involvement, yet this is by no means the case with such a degree of ulceration as is here described, and that the organisms in the urine have been so few that they have hitherto escaped detection by the microscope, is one of the remarkable and unexplained features in connection with this case.

The fact that the colon bacillus has twice been found in the urine, and that every specimen, even when freshly drawn, has always contained immense numbers of such bacilli, suggests the possibility—especially in view of the marked present improvement in bladder conditions—that the ulceration may not have been due to the tubercular infection alone, but perhaps also to the action of the bacillus coli commune.

PRIMARY MALIGNANT DISEASE OF THE CLITORIS.

By ELLA B. EVERITT, M.D.,
PHILADELPHIA.

[Before proceeding to the reading of her paper, Dr. Everitt presented a specimen of a fibroid uterus containing a four-months fœtus. She made the following prefatory remarks:

The tumor was removed from a colored woman, thirty-three years of age, who had never been pregnant before. The case was one of urgent symptoms, as the patient was quite worn and exhausted by long-continued pain, and on account of the great abdominal enlargement was unable to sleep in the recumbent posture. At Dr. Croasdale's request I therefore operated and removed the uterus with its contents. The blood-supply from the omental adhesions was very great, the vessels of that structure itself being as large as goose-quills. The removal of the tumor and controlling of the blood-supply occupied twenty-five minutes. The patient was doing well, the pulse was regular and of good quality, and the abdomen was nearly closed, when there was sudden and complete failure of the heart's action, and death occurred after a few faint, gasping respirations. While I had feared at the outset that the patient's general strength was not equal to the severe surgical procedure, I had been encouraged by her condition on the table to hope that she would survive the operation. Her sudden circulatory failure, in view of the fact that she had suffered not at all from hemorrhage, was, therefore, unexpected.

The specimen, when fresh, was exceedingly beautiful. When the uterine wall was first incised the amniotic sac protruded slightly, and through the membranes could be plainly seen the parts and position of the fœtus. The sac has since been broken and a good deal of the beauty has been lost.]

Two cases of epithelioma of the clitoris having come under my observation during the year, my attention was directed to malignant tumors of that organ in general. The rarity of these affections at this site is evident from an examination of the literature, from which I have been able to collect only fifty-seven cases in all. Of this total ten were sarcomata, thirty-three were epitheliomata, and the remaining fourteen were simply designated as cancer. My own case was one of the second type.

Case I.—The patient was referred to me by Dr. Anna M. Reynolds, and was admitted to the Woman's Hospital, November 13, 1900. She was a widow, seventy-two years of age, and had no vicious element

in her heredity. She had always been strong, and had never had pruritus vulvæ or syphilis. She was the mother of five children, and all her labors had been easy and rapid. She stated that about four years before she had experienced a feeling of discomfort in the anterior portion of the vulva, and two years later the sensation had become of a burning, throbbing character. The pain was then confined to the region of the clitoris. Soon afterward she noticed some swelling and hardness at the same point. The tumor, which gradually increased in size, had presented an ulcerated surface for some time before her admission to the hospital. Micturition had been frequent, especially at night, and she was unable to sleep on account of the extreme suffering. The local examination showed a mottled, yellowish, and grayish-white tumor occupying the site of the clitoris, prepuce, and the upper part of the labia minora.

The growth was bilobed, and resembled in general outline a sweet-pea blossom. The portion corresponding to the bulb was considerably darker in color than the outer margins. The superficial tissue was quite necrotic, and hence not sensitive in itself, but pressure upon it caused sharp pain in the underlying structures. A small area of leucoplakia was found on the left labium majus, where it had lain in contiguity with the primary neoplasm. The inguinal glands were not appreciably affected.

With but little hope of being able to bring about a cure, I yet advised operation for the relief of the distressing symptoms. Accordingly, on November 15, 1900, under general anæsthesia, all the involved structures, together with the entire body of the clitoris, were removed by an elliptical incision, which included a considerable margin of sound tissue. The wound was bevelled to the superior layer of the triangular ligament and extended from the lower border of the symphysis pubis to a point just above the orifice. The bleeding was insignificant, only a few ligatures being required to control it. A deep continuous suture of catgut and superficial interrupted sutures of silk-worm-gut were introduced; primary union occurred throughout the greater part of the incision, a small area finally closing by granulation. The resulting cicatrix was white and linear, and the inequalities of surface normal to this portion of the vulva were entirely obliterated. There has been no return of the disease up to the present time.

The microscopical examination was made by Dr. Adelaide W. Peckham. The specimen showed the characteristic epithelial prolongations, gradually increasing in depth until they penetrated the stroma like the fingers of a glove. The same large squamous cells which were found in these projections also lay in small, detached groups, and the round-celled infiltration was very extensive in some locations.

Case II.—The second case was also a patient of the Woman's Hospital, and was under the care of Dr. Laura S. Chapin, who will report upon it more fully. It was of interest as illustrating the recurrence of the disease at the original site after three successive operations, death finally resulting from metastases within a year from the first operation.

A study of these two cases in connection with those collected fur-

nished data on a number of interesting points, and among them we may mention the following:

1. *The Relative Frequency of the Different Forms of Malignant Disease of the Clitoris.* Of the ten cases of sarcoma four are given as melanotic, one as alveolar, one as spindle-celled, one mixed round- and spindle-celled with much pigment, one myxosarcoma, and two undesignated. The diagnosis was confirmed by the microscope in eight cases.

Among the cases definitely reported as epithelioma a microscopic examination is recorded in but eighteen instances. It is probably from the narrative, however, that such an examination was made in the majority of the cases. It is also probable from the history of the fourteen cases not especially designated that they belonged to the epithelial group.

2. *Relative Frequency at Different Periods of Life.* Forty-four of the total fifty-nine cases occurred after the fortieth year, although four cases were noteworthy because occurring before the age of thirty, and one, Lannois' case of sarcoma, was in a child of five years, whose death followed four and one-half months after the removal of the growth. The age classification is as follows:

Age.	Cases.
70–80	11
60–70	14
50–60	9
40–50	11
30–40	5
20–30	3
Under 20	1[1]
Not stated	6

A study of the ages of the sarcomatous cases shows fully as wide if not a wider range than in the epitheliomatous cases, the limits being five and eighty years.

3. *Antecedent Conditions.* Various predisposing causes have been assigned as influencing the development of malignant disease in this region, among them pruritus vulvæ and syphilis. The former was known to have existed in but three cases, and syphilis in two cases of this series. Itching was not infrequently the earliest symptom complained of, but it was usually found to be one of the manifestations of the beginning disease. Masturbation has also been given as a possible cause, but was present in only one case. One of Behrend's cases gave a history of having fallen over the stump of a tree, injuring the clitoris in this way.

Of the total number thirty-six patients were married women, four single; the civil state of nineteen was not recorded.

Among the married women twenty-six had borne children, and five were sterile. If one may draw conclusions from so small a number of cases it would seem, therefore, that marriage and child-bearing had some influence upon the development of malignant disease at this particular site.

[1] Child of five years.

4. *Rate of Development.* As information on this question must be obtained from the patient, it is frequently unreliable. The duration of the disease prior to seeking the physician's aid is variously given from seven weeks (Simmons reporting Sir James Y. Simpson's case) to eight years (Kelly). In view of the fact that in a number of instances the growth has been slow for a long period, suddenly taking on more rapid development, it would seem probable that some long-standing cases were originally benign, and subsequently underwent malignant degeneration.

The progress of cancer of the clitoris is, however, generally speaking, slow, and its course may undoubtedly cover a considerable length of time. There seems to be no apparent reason why malignant development in a region having such a very abundant blood-supply should be unusually slow.

5. *Results of Operation and General Prognosis.* What proportion of permanent cures may be obtained it is impossible to estimate, as most of the cases were reported very soon after operation, and no subsequent notes have been published.

It is probable that if a radical and thorough excision is done early, before there is glandular involvement, the chances of complete recovery are greater than in other superficial locations, where the natural course of the disease is more rapid. Generally satisfactory and more or less prompt healing is the immediate result of operations after the inguinal glands have been involved; the ultimate prognosis is unfavorable.

The tabulated list of collected cases, chronologically arranged, is herewith appended. The nomenclature given is that used by the author reporting the individual case.

References.

1. Transactions of the Pathological Society of London, 1848–50.
2. N. Ztschr. f. Geburtsk., Berlin, 1844.
3. Lancet, 1856.
4. Transactions of the College of Physicians of Philadelphia, 1857.
5. Medical Times, 1860
6. Allg. Wien. med. Ztg., 1866.
7. Gazette Hebdomadaire, 1868.
8. Bulletins de la Société anatomique, 1870.
9. Société anatomique, 1874.
10. Gazette Hebdomadaire, 1874.
11. Ann. Univers. di med. e. chir., Milan, 1879.
12. Berl. klin. Wochenschrift, 1881.
13. Vratch, St. Petersburg, 1881.
14. Clinique de l'hôpital Necker, 1882.
15. France médicale, 1882.
16. Bulletins de la Société de ch. de Bordeaux, 1882.
17. Médicin prat., Paris, 1882.
18. Société Anatomique, 1883.
19. Gazette des hôpitaux, 1883.
20. Gazette médicale de la Picardi, 1884.
21. Jahresb. ü. d. chir. Abth. d. Spit. zu Basel, 1884.
22. Sommer, Felix. Ueber Carcinoma der äusseren weiblichen Genitalien, Wurzb., 1885.
23. Eberhart, Franz. Zur Casuistik der Malignen Tumoren der äusseren weiblichen Genitalien, Wurzb., 1885.
24. Archivés de Tocologie, 1885.
25. Transactions of the Pathological Society of London (London), 1885–86.
26. Mertz, Paul. Zwölf Fälle von Neubildungen der Vulva, Bresl., 1885.
27. Gaz. méd de Paris, 1885.
28. Clinique ch. de l'Hôtel Dieu, 1888.

29. Simmons, F. Transactions of the Edinburgh Obstetrical Society, 1884–85.
30. Annales de Gynécologie, 1886.
31. Valeriani, F. Epitelioma primitivo della clitoride, Osservatore, Torino, 1887.
32. Boivin et Duges. Traité des Maladies de l'utérus.
33. Dauriac, Jules. Du cancer primitif de la region clitoridiem, Paris, 1888.
34. British Gynecological Journal, 1889–90.
35. Montreal Medical Journal, 1888–89.
36. Johns Hopkins Hospital Reports, Baltimore, 1890.
37. Spallanzani, Roma, 1890.
38. von Langesdorff, Georg. Zur Casuistik der Tumoren der äusseren weiblichen Genitalien, Freiburg, B. 1890.
39. Transactions of the Medical Society of New York, 1891.
40. British Medical Journal, 1894.
41. Transactions of the Pathological Society of London, 1894–95.
42. Gazette d. hôp. de Toulouse, 1894.
43. Bull. Soc. belge de gynec. et d'obstet. Brux., 1895.
44. American Gynecological and Obstetrical Journal, New York, 1898.
45. Kelly. Operative Gynecology.
46. Centralbl. für Gynäk., Leipzig, 1898.
47. Glasgow Medical Journal, 1898.
48. Pacific Record of Medicine and Surgery, San Francisco, 1898–99.
49. Reed. Text-book of Gynecology.

No.	Reported by	Date of report.	Age of patient.	Civil state.	No. of children.	Duration of disease.	Early symptoms.	Later course.	Glandular involvement.	Operation.	Result.	Diagnosis.
1	Brooke,[1]	1848	45 yrs.	M.	0	2 yrs.	Pain on coitus; later excrescence.	Gradual growth; subsequent ulceration.	Yes.	Removal by ligature; subsequent ulceration removed by knife and cautery.	Cicatrization after operation. No later report.	Carcinoma.
2	Hedrich,[2]	1844	70 "	M.	0	Indefinite	Itching and burning; later tumor.	Gradual.	.....	Not operated upon.	Death 4 mos. after consulting physician.	Epithelioma.
3	Cauton,[3]	1856	66 "	M.	7	6 mos.	Tumor.	Gradual for 4 mos. then rapid growth.	No.	Removal by knife.	Cicatrization complete in fortnight.	Epithelial, melanotic and encephaloid cancer.
4	Corse,[4]	1858	66 "	M.	...	1 yr.	Tumor.	Gradual growth.	.....	Removal by caustics; surface did not heal; excision one year later.	Recovery.	Cancer.
5	Hutchinson,[5]	1860	50 "	...	...	4 mos.	Tumor.	Rapid growth.	Yes.	Removal.	Cicatrized 6 weeks after operation; recurrence 6 mos. later; death in 16 months.	Cancer.
6	Pitha,[6]	1866	84 "	...	...	12 yrs.	Tumor.	Slow growth; later more rapid.	.....	Removed by patient with string; recurrence; second removal by bistoury and écraseur.	Cicatrization complete in 6 days.	Epithelioma approaching papilloma (microscope).
7	Bailly,[7]	1868	72 "	M.	4	8 mos.	Tumor; later ulceration and pain.	Late growth, rapid.	.....	Removal.	Recovery.	Melanotic cancer (microscope).
8	Percheron,[8]	1870	70 "	...	...	.....	Tumor.	.....	Yes.	Removal.	Recovery in 3 mos. relapse in 13 mos. glands involved; death in 2 years from beginning of disease.	Epithelioma (microscope).
9	Leger,[9]	1874	.....	...	...	1 yr.	Tumor.	.....	.....	Cauterization.	Death from exhaustion and general invasion.	Tubulate epithelioma (microscope).

10	Verneuil,[10]	1874	.....	...	...	.....	Tumor.	.....	.....	Removal by galvanic knife and écraseur.	Relapse 2 months later; death 7 months after operation.	Epithelioma.
11	Valeriani,[11]	1879	48 yrs.	M.	5	1 yr.	Pain; later tumor.	Gradual growth.	No.	Extirpation by cautery, mollette of museux and bistoury.	Cicatrization in 24 days.	Epithelioma (microscope).
12	Müller, C. J.[12]	1881	.....	...	...	.....	Tumor.	.....	Yes.	Removal by knife; glands not removed.	Cicatrization; death 12 days later from increasing prostration.	Melanotic sarcoma.
13	Soubougyn,[13]	1881	70 yrs.	...	...	2 mos.	Adenitis; itching; tumor.	.....	No.	Ablation by thermocautery.	Recovery in 20 days.	Epithelioma (microscope).
14	Trélat,[14]	1882	66 "	M.	7	2 mos.	Tumor.	.....	No.	.....	.....	Epithelioma.
15	D'Jouin,[15]	1882	44 "	M.	2	2 yrs.	Ulceration, tumor.	.....	No.	Removal by thermocautery. Operator, Péan.	Cured.	Epithelioma.
16	Hirigoyen,[16]	1882	65 "	...	...	6 mos.	Ulceration.	.....	.....	Removal by thermocautery.	Recovery in one month.	Epithelioma (microscope).
17	Péan,[17]	1882	.....	...	...	18 mos.	Psoriasis, ulceration.	.....	Yes.	Removal by bistoury.	Recovery.	Epithelioma (microscope).
18	Lannois,[18]	1883	5 yrs.	...	...	"Long time."	Tumor.	.....	.....	Removal by écraseur.	Relapse; death 4½ months after operation.	Sarcoma (microscope).
19	Sorbets,[19]	1883	65 "	M.	2	15 mos.	Tumor, ulceration.	....	No.	Operation 6 mos. later.	Cured 2 months after operation.	Epithelioma.
20	Huber,[20]	1884	55 "	M.	5	2–3 yrs.	Pruritus, later tumor.	Gradual growth.	Yes.	Removal by écraseur, knife, and thermocautery.	Cicatrization complete.	Epithelioma.
21	Basel Jahresb,[21]	1885	51 "	M.	6	2 yrs.	Tumor.	Slow growth.	Yes.	Excision.	Recovery in 3 wks.	Epithelioma.
22	Behrend,[22]	1885	43 "	M.	...	.....	Swelling and pain.	.....	.....	Removal by knife.	Recovery.	Epithelioma (microscope).
23	Behrend,[23]	1885	37 "	...	...	.....	Tumor.	.....	Yes.	Excision.	Death.	Spindle-celled sarcoma (microscope).
24	Deschamps,[24]	1885	75 "	M.	1	.....	Tumor.	.....	Yes.	No operation.	Death from exhaustion.	Epithelioma.
25	MacCormac,[25]	1885	61 "	M.	0	2 yrs.	Tumor.	Rapid growth latterly.	Yes.	Removal.	Recovery.	Epithelioma (microscope).
26	Mertz, Paul,[26]	1885	58 "	W.	7	9 mos.	Pain; tumor.	Gradual growth.	Yes.	Removal of tumor and glands.	Wound granulating, discharged as "healed."	Carcinoma.

No.	Reported by	Date of report.	Age of patient.	Civil state.	No. of children.	Duration of disease.	Early symptoms.	Later course.	Glandular involvement.	Operation.	Result.	Diagnosis.
27	Polaillon,[27]	1885	70 yrs.	...	...	Indefinite over 2 mos.	Discharge of bloody & purulent material; probably antecedent tumor.	Gradual growth.	No.	Removal.	Cicatrization incomplete 7 weeks after operation.	Epithelioma.
28	Richet,[28]	1885	40 "	M.	1	6 mos.	Tumor.	.....	.....	Removal by thermocautery.	Three months later node in cicatrix.	Epithelioma (microscope).
29	Simpson, reported by Simmons,[29]	1885	69 "	M.	...	7 wks.?	Acute pain on micturition.	.....	Yes.	Removal.	Recurrence two years later.	Epithelioma (microscope).
30	Terrillon,[30]	1886	62 "	...	...	"Some mos."	Pain; tumor.	.....	.....	Removal by thermocautery.	Cicatrization in three weeks.	Melanotic sarcoma.
31	Valeriani,[31]	1887	45 "	M.	8	2 yrs.	Hardness of the clitoris; darting pains.	.....	No.	Removal by bistoury and thermocautery.	Recovery slow.	Epithelioma.
32	Boivin et Duges,[32]	1888	34 "	M.	2	.....	Tumor; pain.	.....	.....	.....	Death five months later; secondary involvement of uterus and vagina	Epithelioma.
33	Boivin et Duges,[32]	1888	45 "	...	...	2 yrs.	Tumor.	Rapid growth.	.....	No operation.	Death 31 days after admission to hospital.	Cancer.
34	Gallard,[33]	1888	76 "	M.	9	4 mos.	Itching; tumor.	Gradual growth.	.....	.....	.....	Cancer.
35	Péan,[33]	1888	61 "	M.	2	.....	Ulceration.	.....	.....	.....	.....	Cancer.
36	Edis,[34]	1889	43 "	S.	0	18 mos.	Urethral irritation; painful micturition	Gradual growth.	No.	Removal by Paquelin cautery. Granulations.	No return 3 or 4 months later.	Epithelioma.
37	Edis,[34]	1889	.....	...	...	Over 12 mos.	.....	.....	Yes.	Inoperable.	Death 3 months later.	Epithelioma.
38	Lafleur,[35]	1889	80 "	...	...	3 yrs.	Tumor; hemorrhages.	.....	No.	Removal.	Recovery.	Melanotic sarcoma.

39	Robb, H.[36]	1889	26 yrs.	M.	...	.....	Pain in ext. genitalia.	.....	No.	Removal; local anæsthesia.	Patient discharged 7 days later; wound healing.	Myxosarcoma (microscope).
40	Binaghi, R.[37]	1890	34 "	W.	3	6 mos.	Pruritus; small red nodule.	Gradual growth.	Yes.	Excision; sutures.	Cicatrization complete in 4 weeks.	Epithelioma (microscope).
41	von Langsdorff,[38]	1890	.....	...	...	4 wks.	Tumor.	Steady growth.	Yes.	Excision of tumor and glands.	Cicatrization and recovery.	Small round-celled and spindle-celled sarcoma. (microscope).
42	Townsend, F.[39]	1891	60 yrs.	S.	0	2 yrs.	Pain in vulva; tumor.	.....	No.	Ligation and removal.	Death 6 mos. later from cancer of liver.	Cancer (autopsy).
43	Townsend, F.[39]	1891	42 "	W.	2	.....	.....	.....	No.	Ligation and removal.	Death 8 mos. later from cancer of liver.	Cancer (autopsy).
44	Townsend, F.[39]	1891	24 "	S.	0	3 yrs.	.....	.....	No.	Removal by cautery.	One year later cancer of labia and urethra; death some months later.	Cancer.
45	Townsend, F.[39]	1891	57 "	M.	4	3 yrs.	Swelling in vulva.	.....	No.	Removal by écraseur.	Death within one year; cancer of pancreas and liver.	Cancer (autopsy).
46	Leech, P.[40]	1892	29 "	M.	...	.....	Tumor.	Gradual growth.	Yes.	Removal of tumor and glands by excision.	Prompt cicatrization; recurrence	Epithelioma (microscope).
47	Battle,[41]	1894	79 "	...	...	6 mos.	Tumor.	.....	No.	Removal.	Death 18 days after operation; secondary deposits universal.	Alveolar sarcoma (microscope).
48	Brindel,[42]	1894	66 "	M.	1	3 mos.	Pruritus; 1 month later small red tumor.	Gradual growth.	Yes.	Excision.	Cicatrization in 10 days.	Epithelioma (microscope).
49	Bull. Soc. belge,[43]	1895	68 "	M.	0	3 mos.	Darting pains; ulceration.	Gradual growth.	No.	Removal.	Recovery in 10 days.	Epithelioma (microscope).
50	Goffe, J. R.[44]	1898	43 "	M.	0	.....	Ulcer.	.....	Yes.	Excision of growth and glands.	Recovery 4 weeks; return in 5 mos.; cicatrization after excision.	Epithelioma (microscope).
51	Kelly,[45]	1898	50 "	M.	3	2 mos.	Tumor.	Gradual growth.	.....	Removal with knife; recurrent nodule.	No subsequent recurrence.	Carcinoma.

No.	Reported by	Date of report.	Age of patient.	Civil state.	No. of children.	Duration of disease.	Early symptoms.	Later course.	Glandular involvement.	Operation.	Result.	Diagnosis.
52	Kelly,[45]	1898	38 yrs.	M.	4	8 yrs.	Tumor.	Slow growth until 6 mos. before consultation.	.....	Removal.	Primary union.	Epithelioma (microscope).
53	Lovrich,[46]	1898	56 "	M.	8	1 yr.	Swelling and hardness.	Increase in size of ulceration.	.....	Removal.	Recovery.	Epithelioma (microscope).
54	Marshall,[47]	1898	57 "	W.	3	4 mos.	Irritation; tumor.	Rapid growth.	Yes (slight)	Removal; sutures.	Cicatrization six weeks later.	Melanotic sarcoma (microscope).
55	McCone,[48]	1898–9	50 "	M.	6	1 yr.	Tumor.	Gradual growth.	Yes.	Excision; glands removed 1 month later.	No return of growth.	Sarcoma (microscope).
56	Whitacre,[49]	.....	.....	...	...	.....	.....	.....	.....	.....	.....	Epithelioma.
57	Chapin,	1901	64 yrs.	M.	5	3 yrs.	Tumor.	Gradual growth.	Yes.	Removal by knife three times.	Recurrence; death after three recurrences.	Epithelioma (microscope).
58	Everitt,	1901	72 "	W.	5	2 yrs.	"Burning, throbbing, pain;" tumor later.	Gradual growth; ulceration.	No.	Removal by excision; sutures.	Recovery; no recurrence 1 year later.	Epithelioma (microscope).

DISCUSSION.

DR. PECKHAM-MURRAY: My great pleasure in being with you is not entirely untinged with a feeling a little more sombre, in that I have not the knowledge of these cases that I ought to have to warrant my coming from New York to talk with you upon this subject. Indeed, I have not come with that purpose, but rather to hear the paper and be instructed than to instruct.

I have never seen a case of primary carcinoma of the clitoris. Compared with carcinoma in other parts of the body, carcinoma of the clitoris is very infrequent. In most of the text-books there is no mention of such cases. The causes have been dwelt upon by the reader of the paper. I think we are not in a position to discuss them further, because the theories of cancer in general are still *sub judice*. Whether we have an organism causing cancer is the earnest endeavor of scientists to determine, and some think a protozoön has been discovered. When the cause of carcinoma elsewhere has been found we shall know the cause of the disease in the clitoris also.

The fact was developed in a paper by Dr. Cumston that there are changes in the adjacent tissues, and this condition was mentioned by Dr. Everitt also. We have not a sufficient number of cases from which to draw deductions, and every well-observed case is a great addition to the literature. There is great difficulty in separating the different lesions of the vulva, and I think Dr. Everitt's paper is of great value, from the fact that she has made this distinction and placed so many cases together. My study of the literature would cause me to regard a recurrence as less frequent than Dr. Everitt regards it. I should like to ask whether peculiarly painful symptoms accompanied the condition.

The specimen of fibroid uterus interests me very greatly. The growth of the fibroid is supposed to depend upon the proximity of the nodule of disease or fibroid infiltration to the vessel. If the bloodvessel nearest is small, the tumor resulting will be small; if the vessel is large, the tumor will increase correspondingly.

DR. FLEISHER: I was asked to discuss this paper because I spoke to Dr. Everitt of having seen a patient with a growth of this character; but before being able to obtain a specimen for microscopical examination the patient left Philadelphia, and I, therefore, cannot report upon it. My data so entirely agree with those already mentioned by Dr. Everitt that it will be impossible for me to add to what she has said. The author mentioned by Dr. Peckham-Murray (Dr. Cumston) says that epithelioma of the clitoris may cure itself spontaneously, but whether he has seen such cases he does not say. A German authority reports a case of carcinoma of the clitoris which was preceded for three years by pruritus.

DR. CAROLINE HEMPSTEAD MARSH: I would like to ask Dr. Everitt whether, in the history of these cases, caruncle was present at all. I have seen several cases, and am always asked if it is a malignant growth or if it will become one.

DR. EVERITT (closing): Replying to the question of Dr. Peckham-Murray relative to pain as a symptom of malignant disease of the clitoris, I would say that this is present; but the existence of a tumor frequently first calls the patient's attention to her condition. The pain is not usually described as severe in character, although the suffering in the case I have just reported was intense. With regard to the nature of the leucoplakia, these seem to be secondary implantations upon sound and adjacent tissues which have not as yet invaded the deeper structures.

As to the question of spontaneous cure, I should not infer from reading Dr. Cumston's paper that he had personally seen the disease in this locality, as he does not mention any case as his own. I, therefore, conclude that no instance of spontaneous cure has come under his own observation.

I have not seen any association of caruncle with the development of malignant disease of the clitoris. One of the cases reported by Reed, which might from the illustration be confused with the condition we have been studying, is carcinoma of the urinary meatus.

N13
J17

J. HULZER
CINCINNATI